# The Dental Digest.

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## Original Contributions.

### SUGGESTIONS ON DEVELOPING AND CONDUCTING A DENTAL PRACTICE ON BUSINESS PRINCIPLES.

By J. N. Crouse, D. D. S., Chicago.

[*Continued from page 197, No. 4, Vol. I.*]

In our last article we discussed at some length compensation in dentistry and methods of dealing with patients in different financial conditions; how to render good services at less expense to those who cannot pay for the services of a dentist of established reputation; and how, at the same time, to add to the income of the dentist.

This we suggested could be accomplished by the employment of assistants; one or more who can operate well, but who perhaps lack the experience requisite to diagnose correctly. These assistants under the guidance of a skillful dentist, will render far better services than the cheap John dentist to whom many of our most intelligent and desirable patients are driven solely on account of expense; and if the business is properly managed it can be made profitable and still the charges be brought within the means of the patient.

A busy dentist can also economize his own time still further by giving much of the detail work, which too many dentists do themselves, in charge of the assistant at the chair; for instance, keeping an account of the time given, diagraming the work performed at each operation, making a record of the same, also of the dictated remarks in regard to the work, the materials used, the roots filled, the capping of pulps and their condition when capped, the alveolar abscesses treated, how and when, the treatments of pyorrhea, what used and which part of denture taken care of

at each particular sitting. In this way a record of everything that may be of advantage in the future can be kept, and will be found invaluable.

But all this is very fatiguing if the busy man of practice does it himself, and it will be more sure of accomplishment and much better done if we have a trained and careful secretary to whom we can entrust all this recording of service, etc. Such an assistant can soon be trained to do the work satisfactorily with such dictation as may be necessary to enable us to know at any time what has been done. This lady assistant should always record the time given to each sitting, and with the records thus taken all we need to do before rendering a bill is to decide what shall be the charge. This we believe can best be decided by a record of the time consumed, charging by the hour being the most accurate method. We will modify this by the further proposition that some operations, and the services rendered some patients, should command a higher fee than others, independent of the question of financial ability; owing to the fact that difficult operations as well as very nervous and ungovernable patients exhaust our energies more than others; and the compensation should be in accordance with these conditions, but the only sure and ready way to estimate the charge is by the hour.

The plan of charging by the filling is open to many objections —let us illustrate. If the bill is to be rendered as giving the number of fillings, the temptation is to have the number as large as possible, and this is often the reason why divisions between cavities that should have been removed are allowed to remain. The bill will look better showing ten gold fillings than if it shows five, which it would have if the weak divisions between two or more fillings in the same tooth had been removed; requiring perhaps a little more time, but giving a more permanent operation. But the bill of items showing ten gold fillings is more likely to meet with a favorable acceptance than one of the same case where the fillings have been reduced to five by doing away with the weak walls.

To a practitioner of any experience this one illustration will suffice for many which could be given to show that the method of charging by fillings is very objectionable. The writer could describe many such cases, but one comes to mind that occurred dur-

ing our early practice. We were consulted in regard to certain work and when asked to give our price, we named $20 for one particular tooth, a lower first molar. The husband and wife left our office and called upon a neighboring dentist who gave them the information that he seldom charged more than $10, his prices ranging from $5 upwards, etc. The work was performed by this dentist and the bill rendered with the fillings diagramed and the charges itemized, but the tooth which should have been filled with one large gold filling, as we had planned, had five separate gold fillings. These same patients returned to consult with us a year afterwards and brought with them the itemized bill which had been paid upon presentation, and which was rendered for $25 for the five gold fillings in this same first molar. The divisions left had in the meantime broken away and the tooth required re-filling.

A little reflection will show that an honest practitioner places himself at a disadvantage or in competition with dishonest methods if he charges according to the number of fillings. Besides, a professional man charges for his services, and many times they are given for other duties than filling: viz, for removing cavities, studying out a plan in the first sittings of how the work shall be performed, instructing in the care of teeth, etc.; all of which are fully as important services and of quite as much value to the patient, so the only way to get a correct estimate of the work is by knowing the actual time given to it.

With all the precautions heretofore spoken of in regard to informing the patient of what the bill for services will be, there will frequently be misunderstandings and disputes; especially is this true with young practitioners who have not an established practice. It is often difficult to make those requiring our services understand that of necessity good service takes time, ability, an immense amount of energy, and a skilled experience, all of which in justice should be well paid for. Some of the arguments in favor of good compensation to a dentist are, that it takes a man of ability to make a good dentist, and quite as much ability as is needed in any profession; a dentist's education is expensive, and from eight to ten years are necessary to learn how to conduct a practice; the business is an unhealthy one and the lifetime of the business of a dentist, or the time in which he can make money, is much

shorter on the average than that of any other profession or occupation; therefore, during this time his compensation should be greater; finally, his expenses are very high in proportion to his income.

An important item in this connection is to make sure that when further services are needed you will be the first choice; and what will strengthen your position and make it much easier to get good compensation and a ready response when you render a bill, is to make sure that you have rendered such service and made so favorable an impression that your patients feel confident no one else could do better. How can this be brought about? Let us see.

Have you always gone to your chair or to the work on hand in the best possible physical condition? Have you avoided dissipation and excesses and had your full sleep, so that with a clear head you could think and reason correctly, carrying out well-laid plans with skill and dexterity? Have you always been able to approach timid, shrinking, nervous persons with a degree of delicacy and real kindness that would to a great extent allay many of the misgivings in their mind, treating them in the very beginning as if they were living beings worthy of the most kindly care? Have you made the most careful examination and correct diagnosis, so that one line of procedure is not interfered with by the next? If contouring is the best for a case have you so decided this often difficult question before you made objectionable separations? Have you remembered that not only should the caries be stopped, but the masticating surface left so that the food can be chewed without discomfort when you have completed your service? When getting access to obscure and difficult cavities have you done so in the way best for the patient? Have you always used every precaution consistent with good sense to make the suffering as light as possible, using every possible treatment to lessen the torture? Have you always selected the best material for each given case when filling, or in case of the substitution of lost teeth are your substitutes skillfully and artistically made? When all is completed can you examine the operations and be sure that every part of your service is as perfect as it can be made, and made with the least possible discomfort to those you have served? If all these things are so, you have a right to full compensation. The

recipients of such service should be glad to recompense you two-fold, and if at all appreciative, will do all they can to repay the extreme exertion such service as here enumerated demands. For the dentist who has given such service must have given the very best efforts that he could exert, and he is sure to command in a short time a class of patients who will appreciate to the full extent the merits of such valuable service as described above.

The performing of these varied duties and plans of operating more in detail must be left for future articles.

(TO BE CONTINUED.)

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## DO WE WANT TO BE CLASSED AS A TRUE PROFESSION?

By J. E. Davis, B. S., D. D. S., Columbus, O.

If we do, then we must stop making false teeth. Do we expect a surgeon to make a wooden or cork leg just because he cut off the natural one, or the eye and ear specialist to make a glass eye or ear trumpet because he has treated those members? An intelligent shoemaker will expound just as eloquently upon the scientific way in which a pair of shoes should be made as a dentist will upon the making of a set of false teeth. An intelligent mechanic will learn to make a set of teeth as quickly as he will a pair of shoes, an artificial leg, a wig, a pair of gloves or a coat. One must look well and fit well as much as the other. Making a set of false teeth no more belongs to a profession than does any of these other things named, and so long as dentists hang on to the tail of both a trade and a profession, they will never have the true dignity of the latter.

Teach people that the dental profession is for saving their natural teeth, even to crowning and attaching bridge teeth. When the shopper comes in and asks, "What do you charge for a pair of teeth?" You should be able to say, "I don't make 'false teeth,' but over yonder, right between that shoe shop and tailor shop, you will find a 'false tooth' shop, where you can get a pair for five or six dollars, and the man is evidently making almost as much money as the shoemaker or the tailor." A professional dentist should extract the old teeth, which surgical operation should cost a reasonable but just fee. A feeling of pity

comes over us when we see a poor mortal trying to manage a cork leg, a false arm or a wig. And the same feeling is growing upon us when we see false teeth. It used to be that the few who could afford them were really proud of them and ready to show them to curious friends, but now we often hear the expression, "Oh, those horrid false teeth; poor thing, if I were she, I would never laugh."

I do not believe there is a constitutional law in existence which will prevent *any one* who wishes to make artificial teeth, from working at it as a trade, providing he confines himself strictly to that kind of work. There is no jeopardizing life or health in making false teeth which can be removed or thrown away at pleasure. We see now that the better class of people are willing to do almost anything and pay a good price rather than wear artificial teeth. This feeling should be encouraged by the dental profession separating themselves from the false tooth shops at once and forever. It should not be taught in our colleges; there is enough of the work to tax the skill of the average student. Young men should serve an ordinary apprenticeship in a shop and learn the trade of making artificial teeth, for trade it is. There ought to be shops in cities and large towns where the best gold or continuous gum teeth could be had, and those able to afford them could if necessary, make a short journey to get them, while a common set on rubber should be had in any town.

As a profession we will lose nothing by dropping this trade part of our business, but we have everything to gain. We will get almost as much for extracting a mouthful of bad teeth as we do now for both extracting and making a set of teeth, as people would do more to avoid wearing them. We will be a true profession, true doctors of dental surgery, and not a cross between a trade and a profession, without recognition by either. Another great advantage to us as a profession would be that scores of incompetent operators could not pay their office and advertising expenses by making cheap teeth, while they botch up all the natural teeth they can get hold of between times.

A dentist would have to know how to *save* teeth or he could not gain a foothold in the profession. Our patients would know that it does pay to have teeth filled, and we would then be truly recognized as an exalted profession, entitled to the degree of Doctor of Dental Surgery or Doctor of Medical Dentistry.

## A DIGEST.

By Carl Fischer, D. D. S., Zanesville, O.

In following dental literature the *pro* and *con* arguments about subjects of vital interest to dentists make it sometimes difficult to arrive at a definite conclusion. Following the teachings of authority blindly is not altogether satisfactory to the intelligent dentist, and experiments should always go hand in hand, to establish the truth of an investigation in one's own mind. When sulphuric acid came to the front as an aid to enlarge root-canals, I made solutions from 30 to 50 per cent. of strength and found their action on tooth structure very slow. Calcium phosphate is scarcely attacked by the cold acid and of calcium carbonate we have very little. The acid to dissolve a tooth is nitric acid (of course to be used with judgment). The best way to use it is probably to add to a 50 per cent. solution of sulphuric acid enough to increase action, say 10 per cent. Dilute nitric acid will dissolve steel, while concentrated will not, therefore a steel broach cannot be used. The action of nitric acid varies with the concentration, 3 drops in water is recommended for stomatitis (Hare), while the concentrated form is a powerful escharotic. Where cauterization of the apical space is desirable, surely no objection can be brought forward. Dr. Barrett uses the strong acid in case of necrosis. To stop the action of nitric acid on tissue, soap is the best agent to employ. (Soap can best be dissolved in dilute alcohol.)

Have you used Iodine and Cassia? (Dental Digest No. 2.) Does this mean alone or combined? or for what purpose? or is it a specific? Well both are irritants in a root-canal as far as my observations go, and help to break down tissue.

In reading Dr. Duddy's article on "Titles," no one can but feel the truth expressed in this timely article. I think with Dr. Mears (and if any one knows, he does) that a good dental college furnishes all the mental food necessary to become an excellent dentist. To do justice to both studies in four years means a fine education beforehand.

Ethics now and then has an airing in the dental journals, but it does not influence anybody in the slightest degree. Following the modern principles, honor becomes a back number. Not

mentioning the common everyday advertising dentist, but turning our attention to the college professor, we find a special code of ethics for him. He does not think anything of blowing his horn till everyone becomes nauseated. So that his greatness may not be overlooked he never fails to mention that Dr. Miller shook hands with him or stopped at his house, etc. I know most graduates are not capable of separating the college from the profession, and the bitter feeling and knowledge of being used to enrich the college stays with them when they start in practice.

Coagulation of the albumen in the tooth has furnished a favorite topic for some time. Having practiced chemistry for many years, naturally I use my chemical eye to view such matters. In considering the discoloration of a tooth by an amalgam filling containing copper, we are told that in proportion as it discolors it saves a tooth. Why? I never saw it stated. It is due, not exactly to coagulation, but to the formation of copper albuminate, (which is now an article of commerce), analogous to the conversion of hide into leather through tannic acid. May not a dilute solution of a zinc-salt do the same thing? I don't know but zinc is an element which forms many combinations with other bodies. In speaking of the comparative penetrating power of chemical agents through albumen, one thing is not to be lost sight of, namely a glass tubule is not a dental tubule. The first is not effected by chemical agents, the latter is. Lime and magnesia neutralize carbolic acid, and zinc chloride is precipitated by alkalies.

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## PROGRESSIVE DENTISTRY, THE RESULT OF UNIVERSAL EDUCATION.

By J. C. Townsend, D. D. S., Colorado Springs, Col.

We would beseech you to read, mark and inwardly digest this parody, which should be the voice of every dentist, as the time has come when dentistry must assume a new phase, and we believe that a regular and systematic method of education for both operator and patient should be established.

Progress in any and every form of education and enterprise is the result of reinforcing precept with experience. Education is the road by which we climb the steep and rugged heights of any

business pursuit. It is not only the medium by which we struggle for daily bread, but the source of all light, liberty, love and everlasting happiness. Our profession as a whole, should be one great and grand school which we enter when we matriculate with our Alma Mater, and which we should not be compelled to forsake, until kindly Death dismisses us from our earthly playground. Progress is fostered by the momentum of fever and passion of ambition, by the glory of attainment, the mortification of defeat, the attrition of man with man in association and co-operation. Life is thus valuable as progress accompanies our efforts. Wisdom is often gained from failure, sympathy with others, from anguish suffered by ourselves; strength from conquest; courage in adversity; because we see how little fate can really harm us; humility in prosperity, because we learn how accidental and superficial prosperity really is; charity, because we find with what slow progress the greatness and littleness of humanity is distributed; kindness, because the fire we kindle on our brother's hearth-stone warms and eradiates our own thoughts, and often submerges our failures into success.

We progress generally by the sweat of our brow, perseverance and union of heart; it is no spontaneous blossom, or flowery beds of ease, but reminds us of the breeze that blows through the garden, catching the odors, delightful or repulsive, according to the flowers therein; so out of our lives, and into the viewless world beyond, we carry nothing but results. Thus our real selves or our talents are the resultants of many diverse forces; and the object of a well-defined specified education is to marshal these forces so as to produce strength, beauty and wealth out of seeming weakness and discord. In this broad sense, our relentless zeal for the greatest success and progress is necessarily co-extensive with our lives. Our progress, however, is limited, without unison of accord, and of course, is optional. But we should aim at a certain definite mark, and its merit is in direct ratio to the value we place on our talents.

In this world every man that is worth his salt must be a worker and a fighter of some sort; and carefully selected knowledge, well-earned and learned, is the Vulcan that forges our instruments, sharpens our tools, compounds our medicine, and prescribes all means for a cure.

Well-tempered must be the steel and keen the blade, for in the battle of life, each man has only what he can seize and hold against unrelenting competition. The brain that thinks and weighs, the eye that questions and discovers, the ear that listens and hears echoes of voices inaudible to disinterested ones, the keen intellect that keeps step with the march of sages, philosophers and writers of every age and nation, yields a heart not only brave, but full of sympathy for our greatest advancement and success; practically, financially and spiritually.

The characteristics of our nature must be at least three-fold; the fundamental principles of which are useful, ornamental and elevating.

While recognizing the wide province of a thorough dental education, it is illogical for practical purposes to draw a distinction between the young professional man or his elder changing his location of city or state; as it is necessary for us all to be always fully equipped; but the general principles of honor, truthfulness, justice, charity, courtesy, public spirit, and due regard for the rights of others, should prevail and be urged by every man worthy of his calling.

We have specialized our work, and it is theoretical, as well as practical, and the underlying principles are illustrated by application.

We are glad to know that our colleges are striving, as well as individual benefactors, to train or teach us how to do, not simply how to know. With a specially adapted course of study, and a thorough, competent instructor and examiner, the object is near and clear, and methods direct and effective. Dentists are biased in favor of the tracks trodden by themselves during previous years. The so-called dentists of all professional people are under the greatest temptations to fall into ruts, and to regard with suspicion unfamiliar plans or methods.

We think that new advantages can be gained only by sacrificing older ones, and it is no easy thing to strike a judicial balance between the problematic ounces of profit in one scale and the certain and tried ounces in the other, especially with such staunch conservatives as we try to be.

Besides, empiricism and quackery are as common in our profession as in medicine, and many of the so-called reforms are

half-truths, and half-truths are proverbially more misleading than falsehoods. Experiment shows that lectures and demonstrations are not only beneficial and elevating, but entertaining and healthful on whatever subject, provided it is delivered to seekers of knowledge.

As a profession, we have made great progress in many ways, and yet much, however, remains to be done; and at best we are only standing or encamped on Pisgah, overlooking the land flowing with milk and honey; and yet to advance too fast is more disastrous than to stand still. Yet, if hurry is ruin, rest is stagnation. The great problem of bringing us into more immediate relations with things themselves rather than with this absurd method of written examinations, and the perusal of long articles about the unique devices produced by the ingenious mind and charitable disposition, seems to admit of but one solution.

An ideal is never so real or substantial as a thing. So far as possible the hand should touch, the ears hear, the eyes witness, the feet traverse, that which the brain is desired to know. So we may realize what we conceived. Our minds are crammed with facts and theories, more or less distorted and ill-understood; and useless, because unapplied, and unrelated to the real experiences of life.

The public should think we have real enthusiasm for learning, and not place us far below the best physician; and, in fact, not below any other profession as to science in our calling; but we believe, while the public is not enlightened, that there is no use of our resting under such condemnation, as all our faculties are as hungrily throwing out their tentacula, for the greatest good and success of our life, as any other profession or people, and our so-called selfishness for gain could be modified by union of thought and action.

Now, the question arises, what should every dentist know; and how can state legislation benefit his life and practice and raise dentistry to a higher plane?

Just what a good dentist in general practice should know is an exceedingly difficult question, but we desire to call your attention to the fact, and ask a little of your consideration, if you are public-spirited and desire to make the most of life. Of course, we should have a good academic education, should be known to

have a good moral character, and a diploma from some one of the many reputable dental colleges in this or some other country; should write a thesis on some subject pertaining to dentistry once a year, and deliver the same to the state superintendent, and such thesis should be published in a dental journal or in pamphlet form for general distribution and information.

Of course, the chief aim in every man's life is self-support. And closely following comes the desire and natural inclination for the support of others. But equally as important, should we be true not only to ourselves, but to those with whom we deal, and are called upon to serve; and last, but not least, comes the desire for fame, and doing good unto our fellowmen. These four elements of a successful and honorable business man, of whatever calling, constitute the foundation for a good dentist.

Now, let us look at the different operations a good dentist is compelled to do in general practice. The first important duty is to make a proper diagnosis of the conditions, not only of the teeth, but of the mouth generally; also of the the constitution and financial standing, if possible. Seldom do we spend enough time on these conditions. But the proper diagnosis is the forerunner to success, and he who has the power to arrive at such conclusions first, or with the most dispatch, gets the most out of our profession, or any other.

Then comes the adjusting of temperaments, adapting of circumstances, and ability to use the means at hand to remove the cause of all trouble arising from the teeth. Suffice it to say, that a first-class dentist is called upon to serve in the capacity of a Judge, Physician, Surgeon, Artist, Mechanic, Teacher and Socialist; have a gentle touch and manner, and be exceedingly kind and patient under all circumstances.

And he is expected to know the general principles of Anatomy, Physiology, Pathology. Chemistry, Materia medica, Theapeutics, Metallurgy, and at the same time be a fine operator and expert at all mechanism pertaining to dentistry. He should know the science and practice thoroughly, not only when he graduates, or comes up before the state board, but all the time, so long as he continues to practice, whether seeking a livelihood or fame, to say nothing of his office.

But we are not all constituted alike, nor have we the same

talents, even when called to the profession of dentistry. And here arises the question, should every dentist be up on all kinds of mechanism and medical treatment, in order to practice at all? And should one examination, provided we remain in the same state, suffice without ever raising a voice anywhere again to show that we are alive and doing all in our power, not only to serve the public well, but also to elevate our profession?

Where and how can we best show our honest intentions to elevate ourselves and brother practitioner? We would say, first, by contributing liberally of our income to the support of general education, sustained by a good superintendent; then, through the general association of all practitioners, coming together at least once a year, and not only reading and listening until we become regular drones, but doers as well.

Now, every one can and should contribute something of advantage to the profession once a year at least, and not only in a pecuniary way, but with the use of his best intellect. What faithful workers we are, so far as it is absolutely necessary, but naturally dilatory when there appears no necessity; but every good thinking and conscientious man must admit that all that pertains to the general advancement of our profession is a healthy factor in our lives. If so, let us join heart and hand to bring this about, and there will be enough work for all, and to spare.

The question now arises, how can we get the greatest good and sustain the highest standing for our profession? It seems to us that could be accomplished through a State Superintendent, elected by our State Society, approved by the Governor, and given power of attorney, through the Legislature. Now, such a superintendent should act as examiner and instructor for every dentist in the state, and visit every town where there is a dentist, and devote one day every six months with each dentist, and give several public clinics and lectures for the dentists and public, in all improved methods of practice.

Such a superintendent should be thoroughly up on all branches and an ideal man for the profession. His remuneration should be provided for by an assessment of a certain percentage of the professional income of each dentist, in the state or district over which he has the supervision.

We want to say just here that we think our public school sys-

tems set us an excellent example, inasmuch as their teachers have an examination from a state superintendent every year, in order to sustain their progress.

We must devote more time to study and research, have our monthly associations, wherever there happens to be a half-dozen dentists in the same town or city; let each member write a thesis on some subject once at least during the year, and in reality, take greater pride in our profession, and the public will take greater pride in us, and will reward us accordingly.

The results obtained by having such a superintendent would be that of knowing and practicing the best known principles pertaining to dentistry, without experimenting so much and so long, and to a greatly increased confidence on the part of the public, when made aware of such proceeding, and naturally more attention and work for the same; also a greater remuneration for our work, as well as increase of business. So, let our motto be, "The greatest means for the greatest good."

Now, we must advance by or through some means at once, and all the time. Let us get down to the foundation, and to solid facts, concerning our future prosperity, and act on the same at once. Let us get at something on the line of universal progress, and the Great Ruler of all good works will help us and give us the increase.

Now, a man entering our profession should just as well be compelled to keep up his knowledge of essential things pertaining to dentistry and add thereto, as to be compelled to have in store an abundance when he starts. So let us contribute freely and justly to the support of our best advancement.

A state superintendent should issue a report and give all the information that exists, not only from our state practitioners, but all over the world, and request that each dentist use and try the best methods of operation, and report the results at least every three months. The superintendent should not only enlighten his brother practitioner, but the public as well, and urge regular and thorough attention of the people to their teeth. In other words he should stir up business and blow the dentist's horn. He could control indolent and worthless practitioners by a public announcement of such in his report to the people of the vicinity in which the intruder lives.

In conclusion, we would say, that everything and everybody needs nurture, and dentists especially need association, which should be of the best.

Permit us to say that we think the necessary information of all branches pertaining to dentistry should be marked or compiled in book form by a national board of dental education, and a supplement added from time to time. Now this means that every dentist who has the greatest pride and success of his profession at heart, should be able to learn quickly and thoroughly all the necessary knowledge, and have the same at any time.

We should all be standing on the same level, so far as our knowledge is concerned, and have a definite charge, which should be by the hour. If this meets with your approval, we would be glad to have your endorsement of the principles herein set forth, and as soon as possible; as this will be much to our credit as a progressive and public-spirited people.

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Treatment of Chloroform Asphyxia.—At a recent seance of the Paris Academy of Medicine, reported in the "Bulletin of the Academy," Labbe said that in apparent death from chloroform, he was firmly convinced that artificial respiration should be persevered in for a long time, and instanced many cases in support of this advice, particularly one in which he had kept up artificial respiration for twenty-seven minutes and was finally rewarded with a remarkable success. Lately, however, he had used rhythmical traction of the tongue, suggested by M. Laborde, in the case of a child who, soon after beginning the chloroform exhalation, became asphyxiated. Death seemed absolute, the pupils were dilated to the utmost. As soon, however, as he began the rhythmical traction of the tongue, the patient returned to life with marvelous rapidity; it was a genuine resurrection. He believes this method is preferable to artificial respiration, as it is easier and much quicker. Professor Verneuil said that for some time he had used only lingual traction alternating with flagellation of the epigastrium with a wet towel.—*Med. Review.*

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Sterilization of Surgical Knives and Instruments.—Ihle states that they can be rendered antiseptic by boiling in one per cent. soda solution, without affecting the sharpness of the edge. As soda crystals contain 75 per cent. of water of crystallization, it is necessary to use at least three tablespoonfuls to the half litre of water.—*Archiv. f. Klin. Chirurg, 484, Berlin, '94.*

# Digests.

*Items of Interest for March, 1895.*

"Unprofessional Prosthetics," by Dr. G. N. Johnson, Concord, N. H. The writer says there is no branch of dentistry which requires more skill and judgment, or more varied and extensive scientific information than that relating to rubber plates. While some practitioners have advanced along this line, the majority are practically standing still; consequently there is a great deal of "rubber disease" and kindred ills. The semiology and syndrome of this "disease" is given as follows: "A low order of vitality in the parts covered by the plates and its peculiar pallor; irritation, swelling, redness, inflammation, congested, engorged, hyperemic condition; granulation, granulated masses like a strawberry, red, purple, scarlet, soft and spongy; half the arch filled with a spongy mass; blood oozing from the diseased parts; turgidity of the vessels; roof of the mouth like half decayed raw beef cut across the grain; suppurating, discharging condition, ulceration; pus exuding from the folds; sanguino-purulent fluid constantly exuding from the apertures in the palate over the necrosed bone; sensitiveness so obtunded that no pain is felt, or in other cases, a burning, drawing feverish sensation; lines of inflammation extending to the throat, causing disagreeable tickling sensation, and annoying cough; bronchial affections, chronic catarrh; sloughing of the soft parts; in some cases death." If most plates were examined, they would be found to reproduce every imperfection and air bubble of the plaster. The air-chamber with a suction-ridge around it usually serves to increase the thickness of the plate, and to make enunciation still more difficult. And the worst feature of all is the careful preservation of the impress of the palatal rugæ, presenting to this delicate and sensitive part of the mouth a jagged and unyielding surface. Furthermore, if the dentist arranges the teeth so that all pressure of mastication falls on the anterior portion of the jaw, or so adjusts them that they articulate on inclined planes, and at every occlusion the plate rocks and partially rotates, the mouth is lacerated until a severe case of "rubber disease" is developed.

The following suggestions for the treatment and prevention of the trouble are given: 1st. Vulcanize the rubber plate between metallic surfaces, and give to it the same smooth, continuous, polished surface and rounded margins as to a gold plate. 2nd. Adjust the teeth to articulate on surfaces parallel with the line of occlusion, and thus avoid clatter and twist and tilting of the plate. More dentures are failures from faulty articulation than from any other cause.

"There are still some dentists of high degree who believe that mercurial poisoning results from the wearing of red rubber. And some of the sad cases they report do seem a trifle ludicrous—the unfortunate lady from Kansas suffering eleven long years from chronic diarrhea, nor could be healed of any, occasioned by the wearing of a common rubber plate, and the consequent absorption of mercury! A brief calculation of the largest possible daily dose during that eleven years, even supposing the rubber to be soluble at all, seems to establish the fact that red rubber is a cathartic beside which Ayer's pills fade into insignificance."

"Grip Lesions in the Oral Cavity," by C. P. Bates. The writer tells of a number of cases which came under his notice with the following symptoms: Acute inflammation of the gums and mucous membrane of the entire mouth, together with looseness and great irritation of the teeth. The lesion always developed suddenly, the patient frequently awakening in the night with severe necrosis of the teeth and jaws, and in a few hours the gums and surrounding tissues were acutely inflamed, while the pain in the teeth was intermittent. In spite of treatment with mild stimulants which always afforded some relief, the affection would run its course, usually culminating in two or three days, and then gradually decreasing in severity for about a week, when the teeth and gums would have regained their normal condition. There were no local irritants present, but in every case the patient was convalescing from a severe attack of the grip, so the writer was convinced that it was simply another form of functional disturbance, caused by that disease. The conclusions arrived at, are, that while all pronounced attacks of la grippe are not followed by tooth and gum trouble, there are many instances where the sudden development in the oral cavity of the conditions just described are directly traceable to the after-effects of the malady,

just as functional disturbances of the heart, liver, kidneys, and other vital organs are known to follow an invasion of the grip microbe. It is also apparent that these conditions seldom obtain in the young and robust patients, but with those who have passed the meridian of life, and more especially where there has been a repetition of the grip attack. In some cases the foregoing conditions have presented themselves, run their course, and entirely subsided, only to be followed by the same development of oral distress on a recurrence of grip trouble.

*The Dental Headlight, April-June, 1895.*

"Some Thoughts Touching Excess of Mineral or Calcareous Matter in the System," by J. C. Storey, M. D., D. D. S., Dallas, Tex.; read before the Nashville Academy of Medicine. The writer says that in all limestone regions, lime pervades every source of food supply, the air, and especially the water. Add to this soda in some of its forms, which enters so largely into the various food preparations, with magnesia so often found in the drinking water, and then add the not only useless, but harmful, salts of aluminum frequently found in bread, and there is sufficient source for any amount of these deposits. These mineral substances, taken into the system in excess of the demand after the body is mature, constitute the tartar which is deposited about the necks of the teeth, besides other stony formations. This tartar causes more loss of the teeth than all other sources combined, besides causing other diseases poisoning the blood with the pus generated about the necks of the teeth by this irritant. Perhaps the excess of earthy or mineral substances in the system is the cause of many fatal maladies, notably fatal albuminuria or so-called Bright's disease. This is a disease arising from excessive nutrition, especially noticeable in the pregnant woman. She, however, enjoys immunity from the disease because of the great demand for bone-making material at this time. But where the excess of albumin is cast out by the system, in its passage through the kidneys it may be coagulated in the tubules, form the little casts, and all the pathognomonic signs of Bright's disease. These coagula furnish a nucleus for various earthy deposits, forming little rough stones, which set up ulcerative inflammation, destroy the kidney structure, and de-

velop true Bright's disease. A large deposit of tartar about the teeth usually accompanies this malady, and the most efficacious remedies are pure water or that which contains some acid, but no salts of lime, soda, etc., and a diet also free from these salts. To guard against the disease, one should live on a more purely fruit and vegetable diet, eschewing salt meats, soda biscuits, alum-made baker's bread, and especially water which contains lime or magnesia.

"Treatment of Decay of Deciduous Teeth," by L. G. Noel, M. D., D. D. S., Nashville, Tenn.; read before the Nashville Academy of Medicine. The writer says that this method is a new idea to him and that time alone can prove its value. He suggests the free separation of the temporary molars as soon as it becomes evident that they are decayed, with knife-shaped corundum disks, making a decided V-shaped opening that cannot fully close. Where the sixth year molars are in place and there is decay on the distal surfaces of the second deciduous molar, use safe-sided files of the ancient style, and carefully avoid cutting the enamel of the permanent teeth. After making free separations, treat freely with silver nitrate, and have patient return for treatment until a thorough blackening and ebonation of the dentine is obtained. Where the decay is extensive, nearly reaching the pulp and too deep for the file or disk to entirely remove it, scrape away the softest portions with spoon-shaped excavators, having first thoroughly blackened and sterilized the cavity with the silver nitrate and giving time for structural changes to take place underneath, repeating the cauterization until a smooth, hard, tough, possibly somewhat concaved surface is obtained. All grinding surface cavities should be thoroughly cauterized before fillings are put into deciduous teeth.

*The Dental Register for April, 1895.*

"The Hypodermic Use of Cocaine," by H. B. Hinman, W. of M. The writer says that when the drug first came into prominence as a local anæsthetic, it was frequently used in a 20-per cent solution; but now better results, with much less danger, are obtained by the use of a 2-per-cent solution. Cocaine forms the basis of most of the local anæsthetics used today.

Dr. Hoff's formula for the hypodermic use of cocaine is given:

R. Cocaine Hydrochlorate.....½ grain.
Morphine Sulphate.....¼ grain.
Atrophine Sulphate.....1-100 grain.
Distilled water.....25 M.

In this there is a full dose of a two-per-cent solution, the morphine acts as a corrective to the cocaine, and the atrophine serves as a corrective to both. Cocaine preparations should be renewed at least every three days, for if kept longer, the mould which forms will cause sloughing of the gums. Great care should be used in administering the drug to weak or nervous persons, and to those having heart or lung trouble. A patient bears the administration much better early in the day, and after a hearty meal. The toxic effects are shown by an embarassment of the respiration and circulation, as the former becomes slow and shallow, and the pulse small, rapid and intermittent. The proper antidotes, which should always be at hand, are: ammonia and nitrate of amyl given by inhalation to stimulate the respiration and the heart; opium and chloral; and in extreme cases a hypodermic injection of aromatic ammonia or sulphate of strychnia, together with artificial respiration. When a patient is nervous, a little brandy or ten to fifteen drops of aromatic spirits of ammonia in water should be administered before the operation, thus allaying the nervousness and insuring a strong, steady pulse. The syringe should be easy of manipulation and readily sterilized; and as the needle points are usually too sharp, they can be rounded off on an oilstone. Insert the needle a short distance from the neck of the tooth, and press slowly toward the apex of the root. After passing a short distance into the tissues, slowly inject a drop or two of the solution, then press forward a short distance and inject a little more. Dense tissues take up less of the solution and require less for anæsthetization than when they are more loosely arranged. Do not withdraw the needle for a minute, and then press the finger over the puncture to prevent exudation of the solution. Do not inject into an abscess cavity, as the fluid escapes into the mouth and is apt to paralyze the muscles of respiration there. Two injections of from two to five drops each of a two-per-cent solution, one on each side of the

tooth, are usually sufficient to produce complete insensibility to the pain of the operation. Much of the sloughing of the gums is due to septic matter on the forceps, and not to the cocaine, so too great care cannot be used in the sterilization. If the mouth be rinsed out freely with warm water after the operation, it tends to prolong the bleeding, and thus relieve the gorging of the blood vessels caused by their relaxation, after the over-stimulation from the use of the drug.

*The Pacific Coast Dentist for April, 1895.*

"Dental Jurisprudence, The Question of Skill," by H. R. Wiley, A. B., San Francisco. The writer says that while the law does not require of a dentist that he shall possess a degree of skill equal to that of the most eminent or most skilful man in his profession, and it is to be doubted that the most skilful man in any profession could in the treatment of each case that might come before him use all the knowledge and skill to which his profession had at the time advanced; nevertheless, the dentist must possess at least reasonable or ordinary knowledge and skill within the scope of his profession, if he would practice it with any degree of safety to either himself or his patients. He must not forget that the safety of his patients, while they are under his treatment, sustains a close relationship to his own welfare, as an unskilled operation resulting in serious injury may be followed by a judgment against him for heavy damages. For the law does require a dentist to possess average attainments in the line of his profession, and to keep himself informed concerning the methods indorsed by its leading authorities. If it appear in court that a dentist is wanting in these simple requirements of ordinary fitness, his defense will be exceedingly difficult, even though in the case at bar be shall not have been actually guilty of a malpractice.

"Disease of the Antrum of Highmore from a Medical Standpoint," by W. D. Babcock, A. M., M. D., Los Angeles; read before the Odon. Soc. of So. California, Feb. 7, 1895. The writer begins his paper by saying that there are several cavities opening into the nose; the largest of these is the antrum of Highmore, the maxillary sinus. Its shape is that of an irregular pyramid, its apex being towards the zygomatic process; its lateral walls

are formed by the orbital plates and the lateral plates of the superior maxillary bones; its base or inner wall, which separates it from the nasal cavity, consists of portions of the superior maxillary, palate and inferior turbinated bones, and the unciform process of the ethmoid bone. It communicates with the nose by a round or slit-shaped opening, the size of which varies greatly. The opening lies at the level of the anterior end of the middle turbinated bone, in the middle meatus. There is often a second aperture of communication below the center of the middle turbinated bone. According to Reschreiter, the antrum of Highmore in men always reaches a lower level than the nasal cavity. The lining membrane of the antrum contains acinous and tubular glands, and serves partly as mucous membrane, partly as the matrix of a periosteum for the walls of the cavity. The size of the antrum varies from the size of the little finger to that of a hen's egg, extending over to the roof of the mouth.

Only in the last few years have the troubles of the antrum been carefully looked into or had attention called to them. The cause of empyema of the antrum is disputed, most of the rhinologists believing that the trouble begins in the nose, while the dentists think that diseased teeth and their complications are the main cause. Many rhinologists agree with Zuckerhandle of Vienna, an authority on the anatomy of the nose, who states that the most frequent cause is inflammation of the nasal cavity. One authority, Bosworth of this country, thinks that the trouble does not come from the extension of acute inflammation of the nasal passage to the antrum, but it closes the opening to the antrum, causing, first, hyperemia of the membrane lining the sinus; with this an increase of secretion. This secretion, being confined, degenerates, becomes purulent, then we have empyema of the antrum. While bad teeth may sometimes be the cause, they are not the most frequent one. The first and second molar teeth usually project into the antrum; there is nothing in the antrum or its surroundings to cause decay. It seems that it is normal, not pathological, to have the teeth so project into the antrum, and where the conditions in the nose and antrum are normal, there is no cause for pus to form or necrosis to take place there, because the teeth do project into the sinus. If one could always get the history of the attacks of nasal catarrh which have caused

the closing of the nasal passage to the antrum, the cause would often be made clear. During the last epidemic of influenza there have been many cases of acute suppuration in the antrum. Most of the chronic cases are the result of repeated attacks of acute nasal catarrh, which have caused a pathological condition of the nasal mucous membrane at or about the opening of the antrum. This condition may be either hypertrophy of the mucous membrane of the middle turbinated bone, or it may be polyps or polypoid degeneration of the membrane. There are few cases of polyps in the nose that there is not antrum trouble.

The pathological condition as described by Bosworth is given: "At the outset of the affection the mucous membrane is hyperemic, slightly swollen and with its surface dotted over with minute points of ecchymosis, due to the fact that the blood vessels coursing through the membrane possess exceedingly thin delicate walls, which rupture easily, giving rise to slightly localized hemorrhages. As the disease progresses the membrane becomes swollen to ten or fifteen times its normal thickness, this swelling being largely due to an œdematous condition. * * * This inflammation involves not only the superficial but the deep layer of the membrane which, in this region, constitutes the periosteum of the bony walls of the sinuses. In connection with this there is a somewhat profuse serous exudation, under which the blood-vessels unload themselves, and the swollen membrane to an extent subsides, followed by a more or less profuse secretion of seromucous, together with blood, and this in the course of time—occupying weeks or months perhaps—results in a discharge of pure laudable pus. The latter stages of the disease are characterized by a certain activity in the deep layers of the membrane, or periosteum, under which are formed lamellæ, or spiculæ, of new bone, which may project into the cavity or may form thin plates crossing it in such a way as to divide it into two or more small chambers."

The trouble may have been latent for some time before the dentist or physician is called upon for assistance. It may be present for years before it announces itself. There may be no pain or swelling in the affected cheek, and the manifestation of the disease be a nasal secretion of a continued or intermittent character, fetid or without odor or pus. If the disease has been

of any great duration the health of the patient becomes impaired, he suffering from a mild degree of septicemia, from the absorption of pus. The classical symptoms are not usually present together —such as distension of the antrum, swelling of the cheek, infraorbital pain, escape of pus, lying on the sound side. Some clear reports of antrum troubles have been made during the epidemic of influenza for the last two or three years. Many cases have the same symptoms as this one, caused by influenza: considerable coryza, a watery discharge from both nostrils, a sense of fullness in the left cheek, increasing to intolerable distension of the zygomatic region. The skin over the part became swollen, reddened and tender to the touch; temperature 100.5. No frontal neuralgia present. In twenty-four hours a violent blowing of the nose brought away an ounce of turbid, greenish, purulent fluid; lowering the head to the right brought away more. Shortly after a third escape, followed by a fourth. The acute complication now subsided, although two days after another discharge took place, signaling the end of the affection. The noteworthy points are: the sudden and violent increase in pain during sneezing or coughing; the limitation of pain to the affected region, and the tendency of influenza to single out the locality of its sequellæ in different individuals.

In some cases there is great pain in the upper jaw; the teeth seeming to be elongated. There is pain in the ear, occasionally resembling supraorbital neuralgia. The supraorbital pain is far more frequent than the infraorbital. There is an intermittent, nasty odor, quite evident to the patient but unnoticed by others, which can be observed by the patient drawing the mucus down and back into the posterior nares; this is caused by drawing the odor out of the antrum. Usually pus comes out from behind the middle turbinated bone, and the pus at the anterior end of this bone pulsates at times.

Blennerhœa of the nose rarely occurs without disease of the accessory cavities, and where this symptom occurs it is usually due to empyema of the antrum. Headache will usually be in the frontal region. The opening in the antrum from the nose will generally be covered by polyps, or either polypoid degeneration of the mucous membrane of the middle turbinated bone, or hypertrophy of the same. Denuded bone about the opening can

very often be felt with a probe. There may be pain on percussion. There is likely to be a feeling of distension, with an increase of pain on the affected side, headache and sickness of the stomach toward evening, as, owing to the patient's erect position during the day, no pus can be discharged. Usually there is free drainage into the nose, and the trouble seems to be periodical.

One means of diagnosis is the electric lamp in the mouth. In the healthy subject the pupil has a red reflex, and there is a bright almond-shaped space under the eye. If these two are dark, very likely there is trouble in the antrum, and if there is pain above the eye and in the side of the head, and pus in the nose, a diagnosis should be made for pus in the antrum. Very often antrum troubles do not happen alone, but are generally associated with suppuration in the ethmoidal and spheroidal cells and frontal sinus, which condition must be treated with the antrum. If the diagnosis is doubtful, a few drops of hydrogen dioxide thrown up behind the middle turbinated bone and into the antrum will usually decide the question. If pus is in the antrum a commotion will be felt, and the foaming from the decomposition of pus will be plainly seen under the m. t. bone. If the cases could be seen at the beginning of the antrum trouble, the treatment would be easy and simple, but generally the patient does not apply for relief until all the complications have set in, when the trouble is difficult to combat.

The treatment is surgical: open the antrum; give good drainage. The best place for an opening is between the second bicuspid and first molar and under the molar process, as this is the point where usually the lowest point of the antrum can be reached. After the antrum is opened it must be washed out and kept clean; any cleansing solution will do. Remove all complications, such as polyps in the nose, enlarged middle turbinated bone, pus in the ethmoidal cells and in the frontal sinus, all of which may be the cause of most of the empyema of the antrum. If there is no complication it is a good plan to open into the cavity through the socket of an extracted tooth. If the case is of any duration there is likely to be polyps in the antrum or polypoid degeneration of the mucous membrane, which condition must be removed by curetting or scraping of the cavity. The mucous membrane of the cavity may be in folds. There may be bony septums growing in the antrum,

the result of inflammation; these must be broken down. One aid to recovery is that the opening in the nose is much larger in pathological than in normal cases. Some operators open both through the inferior meatus and between the bicuspid and molar teeth. Others have cured by the injection of fluids through the opening into the antrum through the inferior meatus under the inferior turbinated bone. Still others treat by the dry method: clean the cavity by irrigating it well, dry thoroughly with air, then blow iodoform or any antiseptic powder. After curetting the cavity is often packed with bichloride or iodoform gauze. In any case the cavity must be made and kept clean, but too much force should not be used in washing it out. Hard or soft rubber tubes are very good to keep the opening open; gold tubes are also used.

*Items of Interest for April, 1895.*

"Care of Infants' Teeth," by W. N. Morrison, D. D. S. The writer believes that physicians and nurses are entrusted too long with the care of the mouths, gums and teeth of infants, and that they are neglectful of their trust. The dentist is not called in until the teeth are erupted, eroded, and sometimes irreparably decayed. Three-fourths of the deaths of infants under the age of three years is caused by complications arising from their teeth. Nervous tension, not relieved by normal growth or development of the parts, seeks relief in reflex action on the stomach and intestinal track. Let the mother rub the alveolar ridge and plate with the thumb and finger, and endeavor to expand the arch for the teeth in a natural direction of growth or development, and use the lancet frequently over the points of greatest tension. Infants have been brought out of spasms by the timely use of this instrument, and have even had their lives saved. They should not be given drugs, soothing syrups, or so-called harmless vegetable or animal compounds, but should depend on physical development. Condensed milk teeth are not up to the standard. The same massage is good for older children when the second teeth are erupting.

"A New Dental Law Proposed," by Dr. C. H. Dunning, St. Louis, Mo. The writer suggests the following plan which will produce better dentists and give a general standard of ability: 1. Have a National Board, whose duty shall be to formulate a series

of questions each year for the use of the different State Boards, and also to determine what other qualifications, if any, are necessary for the practice of dentistry. 2. Have State Boards appointed by the Governors of the different States. The boards to meet twice a year, and submit questions to applicants for examination as have been furnished by the National Board, and to grant diplomas to the successful candidates. These diplomas are to be *prima facie* evidence of qualification as required by the National Board, and recognized by the laws of every State in the Union. 3. Compel all dental students to article themselves to some dentist to remain in continuous service for three years, except during the sessions of their colleges, where they must be in attendance. Thus they would get both practical and theoretical instruction. —By this means permits to practice dentistry would be given on merit only, and a dentist with a diploma from an Examining Board would be free to go and practice his profession anywhere he felt inclined, and we would also insure the public against the malpractice of those who are obtaining their diplomas from our colleges without sufficient knowledge of dentistry.

"Varnishing Cavities," by W. G. Browne, Atlanta, Ga. The writer says that owing to the incompatibility of tooth-substance and the materials used for filling teeth, it is best to interpose some substance between the material and the dentine, and he recommends a clear resin, such as damson, dissolved in chloroform. It acts as a non-conductor of thermal changes, as well as an insulator against electrical influences. It is not readily soluble in the fluids of the mouth. Being transparent, no discoloration is shown when used where enamel walls are thin; in fact, it prevents discoloration of the tooth from oxidization when an oxidizable amalgam is used. It is helpful in starting large gold fillings. holding the first cylinders firmly to the dentine, and lessening the danger of the fillings coming out. While it does not by any means supply all the anchorage needed, the varnish does away with the deep retaining pits.

"Repairing Rubber-Plates." Plates repaired in the following manner seldom break in the same place: Put the halves together and drop hot sealing-wax on the lingual surface of the plate, thus firmly setting the two parts together. Make the groove on the labial surface by cutting a little away and boring

a few holes. Press a small piece of rubber in with a hot spatula, then invest the plate in the lower flask with the plaster up to the edge of the teeth. When hard scrape the sealing-wax off, put on the upper flask and invest. When separated there is a smooth surface and the plate of the original thickness. With a sharp enamel chisel gouge in the plate, making zig-zag shaped cuts. Follow the crack and cut down nearly through them, then bevel off sideways as far as the new rubber is to go. Do not drill any holes or dove-tail. The new rubber will attach firmly to the old. In putting on new blocks of teeth file the rubber sufficiently to admit of the new block being ground in. Zig-zag the rubber with chisel, and when ready put on small pieces of rubber and press with hot burnisher. Now invest in the full flask, screw the bolts and vulcanize. This method saves waxing or opening of flask till done, and two or three cases can be put in one flask.

*The Dental Cosmos for April, 1895.*

"The Influence of Pregnancy upon Dental Caries," by Reuben Peterson, M. D., Grand Rapids, Mich.; read before the Grand Rapids Dental Society, Feb. 13, 1895. The writer says that the teeth are probably more liable to become carious during pregnancy, and he gives the modern theory of dental caries: To the general practitioner nothing can be more proven than the chemico-parisitic theory of caries. Dr. Miller has applied the rules laid down by Koch for the study of pathogenic organisms, and has demonstrated that under certain conditions there exists in the human mouth a living ferment capable of self-production; that this ferment produces an acid at the point of contact with the tooth, capable of dissolving lime-salts. It was also shown that this was lactic acid, and that the micro-organisms were anærobic, and therefore could live and thrive deep down in the carious mass. In some fissure of the enamel not washed by the saliva, and thus giving a chance for the lodgment of food, the micro-organism begins its work. The acid is produced and the hard enamel decalcified, and the softer dentine within exposed. By means of the dentinal tubules the micro-organisms gain an easy access to the interior of the dentine. The tubules are packed full, and more lactic acid is produced and more decalcification follows, until the carious cavity is produced. Because of the

ramification of the tubules just beneath the enamel, there is a marked tendency to decalcification from the action of an acid devoid of the presence of micro-organisms. The fact that the tubules are not widened is one among other proofs which go to show that bacteria are at the bottom of the carious process.

This theory being correct, how can it be explained that pregnancy exerts a marked influence upon caries of the teeth? It must be due: 1. To influences affecting primarily the interior of the tooth; or 2. To influences affecting primarily the exterior of the tooth; or 3. To influences affecting at the same time both the internal and external surfaces.

The most commonly accepted theory as to the cause of caries during pregnancy is that the lime-salts are abstracted from the tooth to supply the demands of the growing fetus, but there is not one scientific fact to support this theory. The teeth are not supplied with any system of absorbents whereby the lime-salts can be abstracted, so how can they be carried to the fetus from the tooth? Of all the tissues in the body, the teeth are least liable to undergo changes dependent upon nutrition, and were this not so, a few months of low diet would leave the individual without teeth. If it were necessary to take lime-salts from the mother for the fetus, why are not the bones, which are supplied with absorbent vessels, selected? But there is no evidence that they are affected as it is claimed the teeth are. At first glance there seems to be an analogy between dental caries and osteomalacia, pregnancy exerting an influence over both, most cases of osteomalacia occurring during gestation, and both accompanied by a loss of lime-salts. But a microscopic examination of the diseased structure in osteomalacia shows that at some stages it is a true inflammation, which cannot be said of caries. Another theory to explain the supposed abstraction of lime-salts is, that just enough phosphates are taken into the system during pregnancy to supply the needs of the fetus, and that the natural waste of lime-salts of the tooth is not replaced, hence the tooth suffers. This is more plausible, as there is probably more or less waste and repairs going on in the tooth all the time, and the tooth might become impoverished were the supply of phosphates not sufficient. But a weak point in this view is, that women always excrete phosphates during gestation, and bony growths are found in the inner surfaces of

the calvaria and even in the pelvic bones. They have been found to exist in over one-half the cases of women dying after the fifth month of pregnancy.

A more rational theory to account for dental caries during pregnancy is, that the secretions of the oral cavity become more acid during gestation. For acid secretions will evidently furnish the most assistance to the entrance of the micro-organisms into the interior of the teeth, by causing a decalcification of the enamel, or furnishing a soil suitable to the rapid development of the bacteria. The oral secretions should be tested for acidity during this period, and there is much probability that such a condition does exist. The blood must be looked to for an explanation. It is probable that besides the increase in white corpuscles, fibrin, and water, there is a decided diminution in the alkalinity of the blood. One writer ascribes this condition of the blood to the influences of lithemia upon the maternal organism. The similarity between the symptoms produced by the lithemic condition and those accompanying pregnancy are striking. "As in the *resume* of lithiasis, I wish to recall the persistent effects upon the system caused by the occurrence of a single pregnancy which, manifesting themselves by various lesions not to be ascribed to any other influence, and indicating the permanent adoption by the constitution of a morbid action, which must be regarded as being closely related to lithiasis. In endeavoring to establish a parallel, if not an identity, between the constitutional tendency produced by lithiasis and pregnancy, I have indicated that both originate in a grave disturbance of nutrition; they present a similar modification of the blood; the pathological changes bear a close resemblance; the prominent functional disturbances are broadly identical; the numerous sequellæ are similar; and lastly, after one or more visitations, the constitution is prone to adopt the induced condition as a diathesis." In gingivities the saliva is extremely acid, and this disease is more prevalent, and of greater severity, in persons of a rheumatic or gouty diathesis. The diseases are characterized by an excess of uric acid in the system and a diminution of alkalinity of the blood. Pregnancy is an essential feature in the production of osteomalacia, although just how it acts is not known.

To summarize: 1. It is probably true that dental caries is

more liable to occur during pregnancy. 2. Dental caries is a disease characterized by a molecular disintegration of the normal constituents of the teeth. 3. The disease is caused by the action of certain pathogenic micro-organisms which produce lactic acid, which in turn decalcifies the enamel and exposes the dentine to the attacks of the bacteria. 4. It is improbable that lime-salts are abstracted from the teeth to supply the needs of the growing fetus. 5. More than enough phosphates are ingested to supply the needs of both mother and child, hence the maternal teeth do not suffer from lack of nutrition. 6. During gestation, osteophytes are found, showing an excess of lime-salts in the system. 7. The true explanation must be looked for in some change in the oral secretions, which thereby furnish a more favorable soil for the development of the micro-organisms. 8. There is evidence to prove that the saliva is more acid during pregnancy. 9. This condition is probably due to changes in the blood, whereby its alkalinity is diminished. 10. The analogy between this and the lithemic condition is striking. 11. Vomiting of pregnancy, while it may to some extent aid, cannot be considered a potent factor in the production of caries. 12. Neglect of the teeth during pregnancy cannot be proved to be more prevalent than at other times, and therefore should not be considered among the causes of caries.

"Pulp-Protection," by W. Storer How, D. D. S., Philadelphia, Pa. The writer says that the floor of the cavity in a carious tooth sometimes has a place where the wall of the pulp-chamber has but a thin septum between it and the cavity-floor, and the pulp must be protected from thermal shock or irritation. A suitable sized disk of rubber-dam is very good for this purpose. When the cavity is formed and dried for filling, lightly touch the cavity-floor and walls with a very little mastic varnish. Place a small disk of dam over the cavity-floor; mix some cement, suitably soft; put a little on the center of a second disk and place its cement side on the first one. Then spread the cement under the second disk with a ball burnisher to completely cover the cavity-floor and partially cover the cavity-walls. After the cement has set, the cavity can be filled with whatever material is preferred. The pulp will be doubly protected by the two rubber disks, and the second can be shaped with scissors to suit the cavity. Thin gutta-percha or par-

affin-paper disks, as well as those of vulcanizable rubber may be thus used, and any are preferable to metal disks. When a cavity is filled wholly with cement, a rubber disk, pressed around with a ball burnisher, will carry the cement against the cavity-walls and leave it there; a plugger sometimes carries some cement out with it. An oiled mica matrix, because of its thinness, smoothness, flexibility, resistance to acids, shapibility with scissors, and cheapness, makes an excellent readily-applied and removed cavity-wall. It may be fastened around the tooth with gutta-percha, and if adjusted carefully, no subsequent finish will be required. As the mica matrix is very elastic and frail, care should be taken that it does not spring away from the tooth, and that no broken pieces are left between the teeth.

"Function of the Palatal Rugae," by Henry Burchard, D. D. S., M. D., Philadelphia, Pa. The palatal rugae may be described as a series of ridges running in a transverse direction, and having usually a curved outline. Those of the smallest radius are most anterior, those of increasing radius posterior, and those most posterior are commonly almost at right angles with the median line. They extend to about one-half the length of the hard palate. There is also an ovoid elevation overlying the incisive foramen, which Dr. Allen names the incisive pad. Frequently there is a longitudinal elevation in the median line, overlying the line of junction of the palatal processes of the right and left superior maxillae. Immediately behind the ridges which embrace the cervices of the incisor teeth are usually the most marked rugae, the highest and shortest; and they grow shorter in height, increase in length, and their curves lessen, until the most posterior are nearly straight.

In all text-books on physiology, the earliest stage of deglutition mentioned is that of the passage of the bolus to the space between the muscles of the soft palate and the dorsum of the tongue; its passage thence to the constrictors of the pharynx is described as the first stage of deglutition. Properly, however, deglutition begins as soon as mastication, and its coincident insalivation, is completed, and the bolus gathered into the longitudinal furrow of the tongue. The tip of this organ becomes fixed by engaging with its dorsum, the anterior rugae, and the action of its intrinsic muscles gives a somewhat wavy movement to the dor-

sum which engages progressively succeeding rugae. The anterior part of the raphe of the tongue is in contact with the incisive pad. The bolus is, through the movement of the tongue, literally squeezed to a passage where it is surrounded by muscles, and then passes to the pharynx. The curving direction of the most anterior of the rugae and the presence of the incisive pad insure a better, a firmer contact of the tongue's tip than if these ridges had a straight transverse direction. The posterior rugae being usually nearer straight, serve to make a better contact than if curved, for here the surface of the tongue is engaged in straight lines. That these prominences do not extend farther back on the palatal processes is because they would be useless there, for the muscles of the soft palate and those of the tongue serve to propel the bolus toward the pharynx. Of course the rugae assist the tongue in its government of the position of the food during mastication. They also aid in the formation of certain letter signs, but this is a secondary function.

"Amalgam—Its use from a Practical Standpoint," by Dr. W. E. Halsey, Brooklyn, N. Y.; read before the Second District Dental Society of New York State, Feb. 11, 1895. The writer says that dentists should know the metals and their relative proportions when combined, so that, if satisfactory and pleasing results are obtained from the use of a certain alloy, the reason may be known; and if the opposite is the case, that the fault may be corrected. The best way to prepare an amalgam mass is by combining the alloy and mercury by weight; having first experimented until the correct proportions are obtained. The ability to use zinc phosphate and contour amalgam in combination is only acquired after considerable practice and a thorough knowledge of the working qualities of each. The powder and liquid of the zinc phosphate are placed on the slab ready for mixing, an excess of the powder being assured. The alloy and mercury of the quantity desired are weighed out in such proportions as are known to make the desired mix, placed in the mortar and triturated to amalgamation, removed to the hand and kneaded into thorough homogenity, which is quickly done, as the mass should be of decided plasticity. The amalgam is retained in the hand, the warmth of which will retard setting while the cement is being mixed. The cement should be plastic enough to allow of lining the walls of the cavity

with a considerable bulk. A portion of amalgam, of about equal consistency, is quickly placed in contact and interdigitated into the cement in such a way as to cause the cement to dome in the center of the crown, and also to crowd toward the outer edge of the cavity. In this way a very strong foundation is obtained, the weak walls strengthened and a good color secured. As the cement hardens the enamel edges are cleaned of it, and the building up and contouring with amalgam continued. A number of mixes are necessary, and the last additions are thoroughly wafered, which allows of perfect contour-work, enabling the cutting away of any surplus, and the easy addition where necessary.

Gutta-percha is recognized as being a perfect non-conductor, possessed of good color, easily worked, and more nearly approaching perfect compatibility between filling and tooth-bone than any other material in the whole list, and therefore ranking first as a preventive of recurring decay, but its total lack of edge-strength limits its use as a filling to those cavities which are not exposed to attrition. Zinc phosphate is possessed of excellent color, does not shrink, has great adhesive power, and is comfortably worked. It is not to be used in close proximity to a vital pulp, nor is it to be relied upon as a permanent filling, as it is subject to more or less rapid disintegration when exposed to the fluids of the mouth. Amalgam possesses all the edge-strength needed, resists attrition and the oral fluids, is so readily worked as to permit of any extent of contour-work, even to the entire replacement of a lost crown on bicuspid or molar roots, and has a desirable degree of compatibility when in contact with dentine, as is evidenced by its tooth-saving quality. However, it lacks proper color, is a conductor of electricity and thermal changes, and shrinks, bulges, and spheroids in proportion to the low grade of its alloy and the excess of mercury contained.

As a typical example, a superior second bicuspid is presented which we desire to save. The patient is young and the tooth-structure soft and frail. The whole approximal walls are lost by decay, also a large portion of the grinding surface; the fissure also is decayed deeply, uniting the approximal cavities, which are partly filled by hypertrophied growth of gum-tissue. At the first sitting the cavities are syringed with warm water, and carefully packed with cotton saturated with oil of cloves or campho-

phenique, to crowd out intruding gum-tissues, secure slight separation, and obtund sensitive dentine. At the next sitting the bicuspids and first molar are placed under the rubber, the edges being carefully tucked under the gum with a thin scaler without the use of ligatures, and the cavities dried. The enamel edges are carefully trimmed, conserving all that will be consistent with zinc phosphate as a liner and strengthener. The decay is carefully removed from the circumference of the cavities, and, if sensitive, obtunded with oil of cloves, eugenol, or campho-phenique, avoiding any of the escharotic agents. A considerable portion of softened dentine is conserved over the region of possible pulp-exposure, and carefully protected with a thin wafer of low-heat gutta-percha, which is easily placed by picking it up with a warmed instrument touched to the wet stopper of the cajuput bottle, warming slightly over a spirit lamp, placing accurately in the cavity, and pressing the edges into apposition. The oil of cajuput softens the gutta-percha just enough to cause adherence, and also acts as an obtunder.

The first demand for the salvation of such a tooth, when the cavities are prepared, is pulp-protection; and for this gutta-percha is selected without hesitation, three wafers being necessary, one in each approximal cavity and one at the bottom of the fissure.

The second need is to guard against recurrence of decay at the cervical margin, and submarine amalgam is used, being built down to a line with the gum festoon, the last portions wafered and the edges carefully trimmed with a very thin sickle scaler. The hardening by wafering and the careful trimming and finishing of this portion of the filling at this time is a very important point, as it never afterward can be so well and easily done. The third need is the strengthening of the frail enamel-walls and the prevention of their discoloration. Zinc phosphate ranks first in these desirable attributes, and may be used in combination with the amalgam while both are plastic, or simply as a liner mixed to a plasticity which will allow of easy and thorough adaptation to the cavity-walls with a small ball burnisher, occasionally touching the instrument to an oil-pad to prevent adhesion of the cement. And now the conditions call for a material possessed of excellent edge-strength, resistive to attrition from mastication, and of good color. Contour amalgam, when properly inserted, fulfills these

conditions most admirably. Amalgamated with sufficient mercury to render the mass plastic, the first piece is placed in apposition to the previously-inserted submarine amalgam in the distal cavity at the cervix, and tapped into thorough amalgamation; each succeeding piece is inserted and tapped (not burnished) into homogenity until the distal cavity is wholly filled, contoured, and extended into the fissure; the last portions are wafered, and the lost contour is carefully restored. The mesial cavity is filled in the same manner, uniting the two fillings in the fissure. The wafering must be thorough, rendering full contouring and finishing easy, therefore insuring a minimum of shrinkage and strong edges. Such a combination filling must appeal to us all as fulfilling its mission of tooth-salvation; the pulp is protected from all outside influences; the weak walls are strengthened and color is maintained; the recurrence of decay is guarded against by a coppered amalgam at the cervical wall, and the lost contour restored. The result is a tooth of good appearance, with a prospect of years of comfortable service.

*The Dental Review for April, 1895.*

"How Can a Dentist Best Improve and Enlarge His Practice Ethically," by W. H. Fox, D. D. S., Chicago; read before the Chicago Odontographic Society. The writer says that a code of ethics is necessary to the satisfactory diffusion of knowledge and unity of method in practice. The necessity of a code is that all persons subscribing to its provisions shall act within certain restrictions, and shall follow along those lines which have been selected as exemplifying the greatest good, those lines which develop within one the highest traits of which one is capable, and which give to the world the honest returns of intelligence. The lethargy which predominates within the dental profession, upon ethical procedure, permits those phases, dangerous to the high standard, to appear, and while this lethargy cannot affect the integrity of the science, it can hurt the profession in the minds of the public. A young dentist should spend his spare time in reviewing past information; this will keep him from discovering a 'new method' which was discarded as impracticable years before. New methods should be tried and old ones performed in different ways. The periodicals of the day should be carefully read and studied, and

the progressive element of the profession should be his associates. Lastly, a dentist is always judged by his patients, for he surrounds himself by those of his stamp of character.

"Chronic Alveolar Abscess with Complications," by Truman W. Brophy, M. D., D. D. S., Chicago. While acute alveolar abscess is usually amenable to treatment and is promptly cured, if the disease becomes chronic and is attended with complications, the very best judgment must be used in making a diagnosis, and in outlining and following the treatment required. If a tooth having a chronic alveolar abscess fails to respond to the usual treatment, namely, cleansing of the canals, with the proper use of antiseptics and stimulants, there is a complication present. This complication may be the denuded apex from which the pericementum has been destroyed by the process of suppuration. The carious bone surrounding the apex of the root of a tooth gradually breaking down and minute granules thus forming in a sac or cavity, may find their way to the surface through the fistulous opening that is established. This fistulous opening may not be visible. If a superior incisor tooth, the fistula may extend into the nasal passage, and if an inferior, it may make its way beneath the chin, or occasionally the fistulous tract may extend as low as the clavicle, and in one or two instances on record we find the fistula as low down as the nipple, the pus passing down the long tortuous tract to be discharged at the point mentioned. If it were a superior bicuspid or molar, the pus may find its way into the nasal passage; it may extend backward into the antrum of Highmore, and thus establish a complication which does not always yield promptly to treatment. It may extend back to the tuberosity of the maxillary bone and find its way into the sphenoidal fissure. The pus may from an incisor tooth, as has occurred in several instances in my practice, burrow backward to the anterior wall of the antrum, and find its way into that cavity.

From this complication last noted, the pus making exit in the antrum of Highmore, we may have still further the complication of filling of this cavity with pus, the closure of the natural opening leading from the antrum to the nasal passage, resulting from continuous irritation of the membrane at this point, and then we may have an elevation of the floor of the orbit—a bone that is exceedingly thin and translucent—bringing on intense neuralgia from

the pressure of the fluid against the infraorbital nerve, and finally the pus may penetrate this thin plate of bone in the cavity of the orbit, find its way anteriorly and make its escape just at the lower canthus of the eye. Such a condition, with pus escaping from the fistula opening from the lower lid of the eye, or even dribbling from the lower border of the eye, may deceive even the most skilled ophthalmologist. Again, if pus makes its way from the antrum into the nasal passage through a small fistulous opening, or through an opening which is not occluded by the process of inflammation and adhesion, the condition may be easily mistaken for suppurative nasal catarrh. Pus, in making its escape, usually follows the course which affords the least resistance, but not always so; for we find sometimes that pus forming at the apices of the roots of incisor teeth, instead of escaping from the anterior alveolar plate finds its way back into the cancellated structure of the superior maxillary bone, passes through to the hard palate, either making a fistulous opening upon the palate or elevating the periosteum, separating it from the bone, and forming a large fluctuating mass beneath this membrane; such a condition is a dangerous one. It is not necessary to state that a bone deprived of its periosteum is in a critical condition for the want of nourishment which is furnished through the medium of this membrane. It, especially in persons of low vitality, is liable to become carious and cause a very serious complication. I would state that the reason why we have carious bone in some cases, and necrosis in others from apparently the same cause, is due to the degrees of vitality met with in different subjects. For instance, a strong, vigorous, healthy person having an alveolar abscess form, may have as a complication caries of the bone if the condition becomes chronic, resulting from lack of care and lack of treatment, or improper treatment. If, on the other hand, a person of vitality, one who is suffering or has suffered from specific disease, were to suffer from the same pathological condition, he, in consequence of a failure of the tissues to repel the advance of the inflammatory process, or to resist it, might have, and probably would have the circulation overwhelmed, osteitis and stasis established, and necrosis of bone as a result.

Another complication, usually common in dental practice, is an alleged pyorrhœa alveolaris. We have all of us been called

upon to treat cases which have been in the hands of others and treated for pyorrhœa alveolaris, when the suppuration seemed to be confined to one or two teeth—sometimes three or four teeth. The pus, which was supposed to be the result of pyorrhœa alveolaris, was not by any means due to that disease, but was a discharge from an alveolar abscess down between the root of the tooth and the alveolar process, then discharging at the neck of the tooth, between it and the gum tissue.

Another complication, and one which is attended with a great deal of pain is due to partial death of the pulp. In case of exposure of the pulp at the end of the roots from any cause, as from absorption of the gums and alveolar process, the apical pulpitis terminates—if permitted to take its course—in suppuration. If this exposure occurs at the apices, e. g., of the buccal roots of a superior molar, we have a result, eventually, death of those branches of the pulp in these buccal roots, while the branch supplying the palatal root may be still living. In such cases, we have a flow of pus from the gums which is easily mistaken for pyorrhœa alveolaris, and yet emanating directly from an alveolar abscess situated at the apices of the buccal roots of the molar tooth, while the continuous irritation of that portion of the pulp still living in the palatal root keeps the patient in constant pain. These cases are, in my judgment, more common than is generally realized. Indeed, we have cases where there is no marked absorption of the gum tissue or alveolar processes, where from caries a portion of the pulp may be devitalized as a result of continuous irritation, while another portion within another root may yet live. In such cases we have a flow of pus along the walls of the tooth and about the gums on the affected side, while a tooth may be sensitive when tested on the neck by heat, or by any other method to ascertain whether it be sensitive or not, and the operator in consequence thereof may be misled.

Still another complication of chronic alveolar abscess we have in frequent accumulations of pulp nodules, affecting one or more roots within which is vital pulp tissue, while another root may be free from these nodules, the pulp tissue within dead, and an abscess at its apex.

The writer urges the profession to make a careful diagnosis in such complications. Complications of chronic alveolar abscess

frequently cause deformities, permanent physical infirmities, septicema, and loss of life, so the subject should be thoroughly understood. The parts must be kept antiseptically clean, and while antiseptics are invaluable in both chronic and acute conditions, some agent must be employed to promote the formation of granulations. Stimulants are essential, even carrying them far enough sometimes as to cauterize the surfaces upon which we expect healthy granulations to form. Antiseptics, germicides, etc., are capable of preventing, and, in some instances, arresting the formation of exuberant granulations and fungi, but now and then in surgical practice the milder forms of these agents are impotent when used for the purpose of establishing a new condition, namely, the destruction of extensive fungi and the promotion of the formation of healthy granulations, and thus aiding the process of repair.

"Some Points on Solutions of Iodine," by W. V-B. Ames, D. D. S., Chicago. The writer says that the need of ideal antiseptic dressings for the root-canals of pulpless teeth, led him to experiment with iodine solutions, because of the satisfactory results of a considerable use of iodine as liberated from a solution of iodide of potassium by electrolysis as a remedy in pyorrhoea pockets. Iodine is soluble to some extent in all volatile oils and most other fluid hydrocarbons. The ideal solvent seems to be terebene or other terpenes, having the composition $C_{10}H_{16}$. Terebene will dissolve twice its own weight of iodine and yet have a decidedly fluid consistency. The solubility of iodine is peculiarly affected by the presence of tannin, which fact immediately suggests its use in connection with the solution of tannin in glycerin much used as an application to recently devitalized pulps. While plain glycerin will dissolve only about 1 grain to the drachm, if tannin be added in proper quantity at least ten times that quantity will be readily taken up.

The use of solutions of iodine in such agents as creosote, carbolic acid, and campho-phenique are precluded by their objectionable odor. The most valuable solution of iodine resulting from my experiments has been that in oil of cassia. Pure cassia with iodine dissolved to the extent of 2 grains to the drachm by weight will make a syrupy solution, which seems to be a new compound differing radically from its components, being less irri-

tant than either of the constituents. Its syrupy nature renders it easy of application to pulp canals. It is only slightly soluble in water, and yet such solution gives all appearances of being a potent germicide and antiseptic. From my use of this combination I feel more confidence depending upon it as a dressing to be sealed up for months, or possibly permanently, than any dressing previously used. If pure cassia is used the mixture will become in time quite hard, so that it is necessary to make a fresh solution from time to time. This hardening or stiffening answers a useful purpose oftentimes when used as a dressing or pulp chamber filling, as it becomes in that state almost insoluble. For the temporary setting of crowns, a solution that has become quite stiff can be used as so much cement or gutta percha, softening it somewhat if necessary by immersing in hot water the bottle or jar in which it is contained, the material stiffening again when cold. If a crown fits a root accurately it is held most satisfactorily with this *antiseptic glue*. I have taken them off after being worn for several weeks, set with this, finding a thoroughly aseptic condition within. For this temporary setting of crowns it is a great success when used of the proper consistency.

If it is desired to overcome the tendency to become hard in this mixture of cassia and iodine, a trace of terebene can be relied upon for the purpose. In the solution of 2 grains of iodine in a drachm of cassia, 1 or 2 per cent. of terebene is sufficient, or by using a little more terebene, it is practicable to dissolve more iodine, obtaining probably a more potent mixture and the same syrup consistency. For instance the following parts by weight might be used:

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| Pure oil cassia | 1 oz. |
| Terebene | 5 gr. |
| Iodine | 5 gr. |

By incorporating a sufficient quantity of a suitable insoluble mineral or metallic oxide with the cassia and iodine solution, a mixture similar to iodoform paste is obtained without the same disagreeable features. It is extremely essential that the oil of cassia be pure. Many samples contain a sufficient proportion of other oils, especially that of cloves, to render the solutions of iodine unsatisfactory. The oil of Ceylon cinnamon is not as satisfactory for this purpose as the oil of cassia.

*The International Dental Journal for April, 1895.*

"Bleaching Teeth by Electricity," by Dr. Albert Westlake, Brooklyn, N. Y. The writer describes the cataphoric effect of using pyrozone twenty-five-per-cent. solution in restoring the normal color of teeth in a few minutes. The same appreciation of current, strength and resistance must be considered as is used in cataphoresis on live dentine for cocainizing. * * * Mrs. A. Nervo-bilious temperament; presented right inferior incisor very darkly discolored, a proximal cavity, and incipent abscess. After carefully adjusting rubber involving teeth on both sides, I cleaned the cavity, opened canal, and removed the pulp; then passed a few shreds of cotton saturated with warm salt water in its place, after which I filled the cavity with pure absorbent cotton saturated with pyrozone twenty-five-per-cent. solution ethereal, and applied the positive pole galvanic current, in the shape of a needle, to the moist cotton, and placed the negative pole in the patient's right hand, repeating this three times as the cotton dried. I commenced with four, and increased to about twelve cells, when the tooth began to appear white in patches about the neck and half-way up the crown; this half of the tooth soon presented a bleached condition in sharp contrast to the biting-edge. I then transferred the negative pole and made a short circuit through the upper part of the tooth, after having cut a narrow ridge through the enamel of the biting-edge. I then filled the root-canal and cavity, and the biting-edge with gold. The tooth in other respects still retains a perfectly normal appearance. This first experiment in cataphoresis for bleaching took place on Friday, March 8. The bleaching did not occupy more than ten minutes. The additional cataphoric effect on the periosteum and adjacent tissue was beneficial, as the tooth is perfectly comfortable at the present writing, three days after the operation. * * * Miss T. Nervo-sanguine temperament; left superior central incisor had been treated and an attempt made at bleaching the tooth by a dentist in New Jersey. I removed the gold filling, and found that the tooth presented a dark straw-color. I applied the same method of application, but omitted cutting the biting edge. I found the cavity in this tooth much larger, but as the canal was filled with cement, the resistance was greater, and more current was necessary. I continued the application too long, and secured

too great a bleaching effect. I filled the tooth temporarily with gutta-percha, but will blend the extremely bleached appearance by inserting a lining of cement.

*Proceedings of Societies.*

The Odontological Society met for its thirty-sixth quarterly session at Alleghany City, Pa., March 10, 1895. Dr. J. S. Hertig of Waynesburgh, Pa., read a paper on "Local Anæsthetics." Humanity and self-interest, both demand that our operations be made as nearly painless as possible. How to approximately eliminate the element of pain without making more or less compromise with thoroughness has long been a momentous question with dentists. It still remains one with me in the cutting of sensitive dentine, but in the adjustment and use of ligatures, wedges, separators, rubber-dam clamps, and matrices; for the extraction of teeth and roots, excising superfluous and intruding portions of mucous membrane, we have in hydrochlorate of cocaine an agent that in most cases is a satisfactory eliminator of pain. Other salts of cocaine have been experimented with and one, tropacocaine, is claimed by some to be the most efficient. The nostrum vendors seem to have been the first to discover and utilize the efficiency of weak solutions of cocaine. To such an extent did their use prevail that Dr. E. C. Kirk had ten specimens analyzed and found that the highest per cent. of cocaine contained was 5.68, the lowest, two-tenths of one per cent. Those most extensively used in Western Pennsylvania contained less than 1.5 per cent. The wide use of these compounds demonstrated their comparative safety. Using the analysis of a popular nostrum published in a medical journal as a foundation, I commenced to experiment and found that as good results were obtained with 1.2 per cent. as with a greater amount. After experiments in combining other agents with cocaine, I have settled on the following formulæ:

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| No. 1. | Glycerine | ½ oz. |
| | Aqua Distillata | 1½ oz. |
| | Hydrochl. Cocaine | 12 grs. |
| | Carbolic Acid | 10 grs. |
| | Iod. Potas | 1 gr. |
| No. 2. | Aqua Distillata | 2 oz. |

| | | |
|---|---|---|
| | Hydrochl. Cocaine | 12 grs. |
| | Resorcin | 15 grs. |
| No 3. | Glycerine | ½ oz. |
| | Aqua Distillata | 1½ oz. |
| | Hydrochl. Cocaine | 11 grs. |
| | Resorcin | 10 grs. |

I have not found it necessary to add anything to these to fortify against the possible constitutional effects of cocaine. I have at times added one-fourth or one-fifth grain atropine, but find that marked constitutional effects of atropine were liable to be produced, and though not serious were alarming to the patient. Not more than one-tenth grain in a two ounce mixture should be used, if used at all. Carbolic Acid and resorcin prevent deterioration and are supposed to localize the effect. Glycerine aids in preserving and is said to accelerate osmotic action. Iodide of potassium ranks high as a disinfectant and tends to correct morbid conditions of the mucous membrane.

I have used these compounds for two years for producing local anæsthesia, by injecting into the mucous membrane, and they have given entire satisfaction, with none of the constitutional effects of cocaine and not one case of syncope. To get the best results have the needle point dressed to a short bevel, keep it thoroughly sterilized, have syringe in good order and see that all the air is expelled from it after filling, clean the gums with some disinfectant, carbolated camphor, made by mixing three parts of gum camphor by weight with one part carbolic acid, is good. It seems to be settled that a two per cent. solution of cocaine is equal to a stronger one for injection and is entirely safe. It also seems to be settled that the injection of not more than three-fourths grain will produce no serious results. To counteract an overdose use coffee, aromatic spirits of ammonia, whisky, nitrate of amyl inhaled, or morphine injected.

Dr. J. G. Templeton, of Pittsburg, Pa., read a paper by Dr. C. H. Land, of Detroit, Mich., on "Capillary Attraction and its Relation to the Adaptability of Filling Materials." All fluid substances have an adhesive attraction for solid bodies, and when two solid bodies are brought close together the fluid will demonstrate how great the adhesion is by traveling against the laws of gravitation, as into the pores of a sponge, a wick, or a very fine

tube like a hair. When a fluid substance is absorbed into a very small tube we call it capillary attraction, and when once occupying that space another fluid substance will not evacuate it, but we must resort to mechanical means. When pus or putrified fluid occupies the anterior portion of a small pulp-canal with a sensitive pulp just back of it, the most powerful drug will not have any immediate effect as an obtunding medium until the inert matter has been removed by mechanical means. The law of capillarity holds a fluid substance so firmly that chemical action is retarded —try experiment as follows: Take a small copper tube that is coated on its external surface with gold, put into it the strongest acid to remove the copper; at first it acts freely until the acid in the tube becomes satisfied, then we have the tube filled with a neutral solution held there by the law of capillarity, and retarding chemical action. The tube must be cut open so that constant change may go on. So it is in applying arsenic to an exposed pulp, if the canal is large at one end and very small at the apex the obtunding effect may travel a certain distance so that within twelve hours a large portion of the pulp may be removed without pain, but leaving a small portion not affected by the arsenic, and further application with the obtunded part in position seem to have no effect. A covering of pus, saliva, coagulated blood, etc., will act as a stopper and keep the arsenic from acting. All such must be removed by means of small instruments, the points being very fine so as not to force air or fluid matter before them, causing intense pain. Careful manipulation will remove the obstruction, and then the drug will have a chance to obtund that which remains of the living tissue.

Dr. C. B. Bratt, of Alleghany, read a paper on "Enamel Inlays." While porcelain inlays are very advantageous, the complicated apparatus and intense heat required have been a great hindrance to their general use. Enamel or glass inlays have none of these objections, and possess all the advantages of porcelain. We recognize that gold makes a better covering for the edges of the cavity than any other filling material. With enamel inlays we can make the margins of gold and the greater part in likeness to the tooth. For labial cavities in incisor teeth the important parts are color and contour. To match color make two inlays, the first for a trial piece which may be made hurriedly

without regard to fine adaptation, and without the use of rubber-dam, so that the tooth may maintain its correct shade, then set it with the cement you expect to use. Care should be used to get the correct shade of cement. If it is desired to allow the gold foil used in taking the impression to remain, the yellow shade must be overcome by the color of enamel used. To secure contour take the impression with gold foil, and in filling with enamel material for raised surface keep the material well up in the centre; for concave surface depressed in centre and well up on sides, never allowing any of the material to get beyond the edges of the impression. One way to adapt the inlay is to bevel the opening to the cavity like an inverted cone, then when inlay is forced into place a fine tight joint will be secured. One way to use this material and protect the margins with gold is to fill in about the walls and over the edges, finish and shape the cavity in the gold just as if gold was not used, then proceed as before. Another way is to use two layers of non-cohesive gold foil for taking the impression; after fusing the enamel and inserting, separate the edges of the foil and burnish down, turning the foil in contact with the enamel over the enamel, and that next the wall of the cavity over the tooth, and you have an excellent filling.

*The Medical Age, May 10, 1895.*

"Cocaine Inebriety," editorial. "Doctor Norman Kerr, who easily stands foremost among authorities on inebriety and narcomania, in his latest work mentions for the first time the Cocaine habit, remarking *en passant* that in his experience it is comparatively rare and for the most part confined to members of the medical profession. *Per contra*, a recent writer in the *Bulletin of Pharmacy*, writing from the standpoint of a pharmacist, seems to imagine the habit is much more widespread than has heretofore been considered, that it is continually increasing, and that its growing prevalence is largely due to the greatly reduced price of the drug. He also remarks that it is a pernicious habit among a certain class of pharmacists to offer "Cocaine when asked for something that will relieve toothache, neuralgia, and countless other aches and pains; that in some way the erroneous notion has come to prevail that in treating the morphine habit Cocaine is of great value in counteracting the effects of the former drug."

Proceeding on this principle, numerous quacks have claimed ability to cure the morphine habit, . . . but in its stead the patient become cursed with a vice far more ruinous than all their former ills. . . . To use Cocaine to cure the morphine habit is like jumping from the frying-pan into the fire."

"Certain it is, the Cocaine habit is the most seductive and terrible form of inebriety—the pleasant elation which the drug induces, and the apparent absence of unpleasant sequelæ that accrue to other forms of narcomania, lead to rapid destruction of the mental powers. Numerous cases of fatal poisoning by Cocaine have been reported in current medical literature, but the number of known Cocaine *habitues* is very few—perhaps because unrecognized or, as before mentioned, complicated with some other form of chronic intoxication.

"If it is true that both the medical and pharmaceutical professions are responsible for the spread of the Cocaine habit, owing to the freedom with which this most potent and treacherous narcotic has been prescribed for the relief of pain, it is certainly imperative that there be thrown about the sale of this drug restrictions which alone can be formulated and carried out by these professions, without any reference whatever to measures employed by the State.

"Doubtless pain has recurred after the soothing effect of the first use of the drug has passed away, and the same handy and charmed remedy is again had recourse to without any knowledge of the results that are certain and swift to appear. Thus the craving, beside which the facination of morphine and opium is infinitesimal, has been acquired, and the victim awakes to the fact that he or she has become bound fast to a habit entirely unsuspected.

"It would appear also that in some instances the Cocaine habit has been acquired through the ignorant employment of a prescription by the physician as a succedaneum to opium or morphine, or for the relief of some teasing malady like vaso-motor coryza (hay fever). Nothing can be more disastrous than the substitution of Cocaine for some other drug, since it is considerably more speedy than any other narcotic in displaying its characteristic effects, and quicker in securing an abiding mastery over the taker; the stage of exhilaration being more pleasant than

that of morphine or opium, the drug is on this account also correspondingly more dangerous. Inebriates may indulge to most pernicious extremes in strong spirits for years without apparent mischief; some are even able to carry morphine narcomania to almost incredible lengths ere the drug manifests its deleterious qualities upon the physical and mental organism; but *per contra*, the mental decay and moral perversion of Cocaine excess quickly appear and as speedily increase in intensity. In some instances where the drug has been employed subcutaneously several times daily, an insane condition has developed leading to crime and to suicide; indeed, the Cocaine *habitue* is always insane and not infrequently a "raving maniac." There is also, under the influence of this drug, less sense of time than from any other narcotic, though all substances possessed of anæsthetic properties seem to have a disturbing effect on the mental capacity.

"While Cocaine raises the temperature, its effects are much more swift and short-lived than those of morphine, while its tendency in excess, is always toward delirium and raving madness. In fatal cases stupor and coma follow, with convulsions and paralysis of respiration—or, as Mosso and Kerr put it, "tetanus of the respiratory muscles." That Cocaine acts chiefly upon the central nervous system, first stimulating and paralyzing, is manifest; it contracts the peripheral blood-vessels. Under its use there is at first, usually, increased mental and bodily vigor, which speedily gives way to intense mental depression along with anorexia, insanity, hallucinations, and complete breaking-down of the mind, with volitional palsy and inhibitory prostration, all taking place in a much shorter time than the mental degeneration and physical decadence of alcoholism—in fact, demanding in many cases only as many weeks as alcohol inebriety requires years.

"The peculiar overwhelming danger of Cocaine addiction undoubtedly lies in the fact of the comparative absence of immediate after-effects. For some time at least—always, we might say, where the drug is partaken of in only limited quantities—"there is no *arriere gout;* no unpleasant taste in the mouth next day; no dry tongue; no nausea or morning headache; the pleasurable flow of happiness which seems to have left 'no sting behind' has indeed been a 'rose without a thorn.' Thus, deadly to all that is noblest and manly, to all that is 'lovely and of good

report' in human kind, this speediest of brain disturbers threatens to excel all other mind poisons in its fell sway over the intellect and conscience of man." (Kerr.)

"The drug is usually taken subcutaneously, and the doses frequently follow one another in rapid succession. Taken, as it doubtless frequently is, along with or after some other narcotic, it greatly complicates any attempt at alleviation of the latter. Doctor Mattison, of Brooklyn, has reported a number of interesting cases, as have likewise Erlenmeyer, Kerr, Connolly, Norman, and others, and all unite in the opinion that if taken in time the incipient form of Cocaine inebriety is quite easily relieved, but that the habit once confirmed is most intractable. Kerr declares one of his cases consumed thirty grains of Cocaine daily; the writer personally knows of an instance where three times this amount of this drug was daily consumed; and yet one-seventh of a grain has been known to prove fatal to a stout, healthy man.

"As regards treatment, there can be no dispute. It must be both mental and physical, and, like the treatment of all habits, is seldom of any utility except when carried on under complete and definite restraint."

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Cocain Anæsthesia Rendered Harmless by the Addition of Trinitrin.—The author proposes the following formula, in which trinitrin is introduced, with the effect of preventing the anemia of the brain:

R Cocain muriat..... ...centigrms. xx.
Alcchol sol. of trinitrin, 1 per ct.....gtt. x.
Distilled water.....grms. x.

Each cubic centimeter contains two centigrams of cocain and one drop of the trinitrin solution. Gauthier has used this formula for two years with great satisfaction.—*Revue gen. de Clin. et de Ther.*

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Ice to Relieve Dyspepsia.—Pictet found that when dogs were plunged in a bath of low temperature, and kept there some time, they became ravenously hungry. Being himself a sufferer from stomach disease, he had forgotten what it was to have an appetite; so, wrapped in a thick pelisse, he descended into a refrigerating tank, the temperature being many degrees below zero. After four minutes he began to feel hungry; in eight minutes he climbed out of the tank with a painfully keen appetite. Many such experiments were made, and all the meals he took ofter a short stay in the refrigerator agreed with him. He found his dyspepsia was cured after the tenth descent.—*Ex.*

# Letters.

## A REPLY TO DR. DRISCOLL.

PHILADELPHIA, May 7, 1895.

*To the Editor of the Dental Digest:*

DEAR SIR:—Dr. W. E. Driscoll, I fear, does not fully appreciate my position regarding edentulous or partially edentulous jaws. Nor could he well do so from the short and imperfect extract given in the *Transactions of the World s Columbian Dental Congress* from which the *Digest* copied.

What I attempted to say, and in substance did say at the close of the reading of Dr. J. M. Whitney's very interesting paper, was, that Dr. Harrison Allen, of Philadelphia, had demonstrated some peculiarities of the edentulous upper and lower jaws of the human subject on the exhibition of fourteen skulls of different nationalities. He held that the statement made that the jaws exhibit the result of uniform absorption of the alveolar processes was not true. The bone tissue which held the teeth in place being a complemental structure is indeed rapidly absorbed after the teeth are lost. But when the alveolar processes have disappeared, a secondary process of adaptive hyperostosis takes place. These statements relate in the main to the upper jaw, but the conclusions can be applied also to the lower jaw. This adaptive process occurs in three regions, namely, that for the incisor teeth, that for the canine tooth and the first bicuspid tooth, and that for the second bicuspid tooth and the molar teeth. These regions answer roughly to those occupied by various kinds of teeth, and differ in much the same way as the incisiform, caniniform and molariform teeth differ from one another. The region of the incisor teeth is compressed and beaked, that of the canine tooth and the first bicuspid tooth is coarsely conical or tubercular, while that of the second bicuspid and molar teeth is either broad and massive, or compressed. It is a rare thing to find an edentulous dental arch uniformly hyperotosed or uniformly atrofied, but one or more of the regions above named assume the form described, or at least exhibit indications of changes different in character from the mere loss of the alveolar processes. The lower jaw passes up

in front of the upper jaw in aged individuals who have lost teeth. As a result, the attrition of the incisorial region of the lower jaw is secured against the *front* of the upper jaw. The result attained by such attrition Dr. Allen called "shearing." Shearing takes place in proportion as the upper jaw at its anterior arc is beaked. It is interesting to find that when "shearing" is present the articular surface of the condyloid process is invariably at the anterior part.

Several of the skulls upon the table, which had with such care been arranged and described by Dr. Whitney, fully illustrated and confirmed the statement of Dr. Allen. In a number redevelopment of the process in the incisorial region where the teeth had long been lost was very conspicuous—while in some in other localities where the opposing teeth had maintained their position, there was also evidence of redevelopment. But crania collected from civilized communities in the future will show less irregularity in the edentulous jaws than is shown by the skulls upon the table indicated. In many the symmetry of the ridge will in a great measure be due to the uniformity of pressure from an artificial denture, and an absence of forces which would, without the protection of the denture, have a tendency to stimulate redevelopment, and in some cases doubtless be successful.

I would simply remind our friend, Dr. Driscoll, that in both cases the skulls examined were of very ancient date, and that the diet which had doubtless been essential to the individual, differed very widely from that in which civilized races indulge at the present day. Yours truly, C. N. PEIRCE.

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## LETTER FROM NEW YORK.

NEW YORK, April, 1895.

MR. EDITOR:—Not a little marvel was created at the announcement in the *Review* of March that Dr. Harlan was "in the harness again." No one could be anything but glad for the *Review*, but then, about the DIGEST. Well the DIGEST is young and doubtless full of blood and has its reputation to make, so on all hands it is conceded that the man who carried through the Crown litigation

so far, and showed so much pluck against the Bridge, will push things ultimately to a success. If so in a professional way, as is being shown in the leading article of the DIGEST, there is a good prospect in other projects. "Nothing risked, nothing gained." It is no small thing to move out in the face of so much established business in dental commerce.

There is a general cry in this line in New York that our trade is very dull, so it has been in general regarding dental practice for the last year, and yet we heard of one practitioner to-day for whom the last year had done better than any year before. However, some practitioners are always busy. This is accounted for sometimes by methods of conducting a practice. There seems to be more peculiar associations allied to the financial part than to any other calling. Many will look forward to the line of teaching that is promised in the DIGEST—regarding the education of patients that have not been accustomed to liberal fees, and while it may not apply to all persons and places, yet we think it may be assumed that it will apply on general principles. Teaching on this line has been very meager.

We have omitted an important feature brought into operation at the two last all-day clinics under the auspices of the First District Society, viz: placing a number both on the program against the name of the operator and at the chair of his exhibit, by this means ready information was given who and what was to be seen. Dr. Smith was the originator of this plan, he being one of the clinical committee. The plan was recommended very favorably and it will prove a decided help to other clinical exhibitors. The present administration of the First District Society has shown first-class ability throughout and it will not be a surprise if it is given a second term, and yet the ways of politics are various. It has been intimated that the Society thinks of taking new heart—they have got it, and we don't think they will take on (heart) failure which is so common these days.

April is the month of the annual election, May the State association meets at Albany, and the month of June gets so hot it is possible that little more will be done by this body until Autumn. The O. S. will go actively on for two months more as things look. This body has the biggest kind of executive ability this year—we look for interesting bills at every session.

Dr. Case was a very drawing card and every moment was interestingly occupied. We noticed a decided change in the personal; he has got a good tailor—good clothes do help one out. Dentists of all men should dress well and in good taste. The late Dr. Byron E. Coy of Baltimore, who was an emperor in his practice, once told us while an associate with him, that he had never allowed anyone to dress better than he did. He was an impressive and good looking man. We saw a gentleman present at the last meeting of the Odontological and he reminded us much of Dr. Coy, although somewhat taller; he has got a good tailor also. He is a person that is noticed always for his personal appearance. Dr. Daboll has made an enviable position among the American dentists of Paris. We think his blood was drawn to his stomach like Dr. Guilford's. W. W. W. knows how to fill men's stomachs, it is far easier to bring them into your line of thinking and talking, yet we think grey matter works better with an empty stomach, then after labor, refreshments.

Dr. S. G. Perry brought out at this meeting under the head of new things, some improvements he claimed of hot and compressed air instruments. The doctor is prolific in nice auxiliaries in practice. He must spend a snug sum in these things, well he has got it, and it is doubtless his pleasure.

Rumor says that the Hornets are getting on a fly for something extensive at Asbury Park in August. If they could bring on one of caterer Davis' $1.00 menus it would astonish good eaters, they are equal to most of New York's $5.00 ones, and then, how nice the Hornets look in swallow-tails, for they have almost all got them. They did not do these things when we first knew them 20 years ago. They have good tailors also, and many of them have a good practice and have become better practitioners, of course this ought to be so, it is the object of associations.

Dr. Haskel, 70 years old, and a practitioner in New York for many years, died in March leaving nine children—but all provided for, the Doctor was well fixed in finance. Dr. Mason, 43 years of age, died, leaving a wife; his demise was sudden and caused by apoplexy; he was a graduate of the Harvard School, and was a quiet, modest, pleasant gentleman. He has a brother practicing dentistry in Boston—they were born in Maine. Dr. Mason's first practice was at Dr. C. D. Cook's office in Brooklyn,

after a few years he came to New York and acquired a good practice.

Dr. Jared Hurlbut of Springfield, Mass., whom many Western men know pleasantly, has been seriously sick with kidney trouble for some time, he is one of five brothers, all dentists, three of whom have died.

The first of May is moving time in New York, but so far we have heard of little change among dentists. M. A. G.

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## THE CROWNING OF DECIDUOUS TEETH.

CHICAGO, ILL., April, 1895.

*To the Editor of the Dental Digest:*

DEAR SIR:—Under the head of "A Novel Dental Operation," you quote from "Hints and Queries," in *Dental Cosmos* of August, '94, in which Dr. W. H. Baldwin calls attention to the crowning of deciduous teeth with gold. In 1889, when my youngest son was but 2½ years old, his centrals and laterals were so much decayed that it was an impossibility to fill them with any substance that would be protective in its nature. The idea occurred to me to crown them with gold, which I did very easily and the child wore them in comfort until the permanent incisors appeared. I have since in many cases used the same method and find it very serviceable, although not very artistic. Yours truly,

WM. G. CUMMINS.

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Gold Mine in Cemeteries.—A writer in *Le Temps*, of Paris, has been traveling in America, and of course relates his "impressions." What struck him particularly was not the falls of Niagara, the inquisitiveness of reporters, or the consumption of pie; but the fillings in American teeth. He has consulted the statisticians, and finds that the amount of gold annually pounded into our dental cavities reaches the respectable figure of eight hundred kilograms, representing a value of half a million dollars. All this precious metal is buried with the Yankees when they die, and consequently at the end of three short centuries the cemeteries of the United States will contain gold to the value of $150,000,000. He thinks this will prove too tempting to the practical mind of the future American, and foresees the day when companies will be organized to mine the cemeteries and recover the gold secreted in the jaws of deceased ancestors.—*Ex.*

# The Dental Digest.

PUBLISHED THE

TWENTIETH DAY OF EVERY MONTH.

## Editorial.

### IS IT AN UNLAWFUL COMBINATION?

In our editorial in the March number of THE DIGEST, which was a reply to an editorial in the February *Cosmos*, we said in substance that before Dr. Kirk became editor of the *Cosmos* nearly all the large dental supply houses entered into a trust; that a dental trust was certainly not organized in the interests of the profession; that, of course, no criticism could be looked for from the journals controlled by the combination, but we thought there were a few journals which would have taken the side of the dentist against this unlawful combination, but if they had done so, the advertisements from the trust would have been withdrawn. We also said that there was a vast difference between a Dental Protective Supply Company, composed of dentists, organized on a co-operative basis for mutual benefit, and in no violation of the law, and a combination or trust, forced to keep the prices up, and so tax the profession.

The reply to this part of our editorial was referred to Mr. Lewis, president of the S. S. White Dental Manufacturing Company. This gentleman accuses us of "attempting to raise the dead by publishing anew that which was shown to be false years ago." The question we raise in this connection is, did they prove the accusations to be false? We have not the article at hand referred to by Mr. Lewis, but from the part that he quotes he shows clearly that some of these regulations are in direct violation of the decisions of the courts. Furthermore, if we are not misinformed, some rules adopted more recently are in still further and greater violation of court decisions, and are such as to have a very decided trust complexion. We may be mistaken

about such rules as mentioned being adopted, but we have such evidence in our possession as would be sufficient to prove our position unless other evidence can be shown to the contrary. Will our friend, Mr. Lewis, make public all the rules of the American Dental Trade Association?

We remember seeing a lengthy communication signed by the then president and secretary of the A. D. T. Ass'n., which was sent to the dental profession during the first year of the Association's existence, and which must have been designed to allay or prevent adverse criticism. Both this and the article referred to by Mr. Lewis were looked upon by those who took the trouble to read and think about them, as mere subterfuges. And dentists generally consider it absurd for the A. D. T. Ass'n. to attempt to convince them that such an organization was formed for the protection and benefit of the dental profession; they do not question but that this Association, with the additional rules since adopted, was organized to prevent competition, which might lead to a reduction in the price of articles a dentist buys. The opinion often expressed by the profession is to the effect that they have been liberal patrons of these manufacturers who have gone into the trust, and their patronage has afforded large profits; that out of such patronage the supply houses have been able to build expensive factories and buildings, notwithstanding that they have indulged in extravagant methods of doing business; that they (the manufacturers, not the dentists) have grown rich out of the surplus profits, and that it was unfair to the profession for them to have formed such a combination. Therefore, we can assure the members of the A. D. T. Ass'n. that the profession is not dead, but sleeping.

Going back to the explanation referred to by Mr. Lewis, which states in substance that not a single article has advanced in price by reason of this Association, he probably does not include teeth under the head of a 'single article,' but we feel sure that the price did advance from ten to fifteen cents after its organization. It is true that there have been reductions, but they have been forced by outside causes. The drop in the price of teeth from fifteen to twelve cents, just at the time when we were arranging to import the best teeth in the world, would probably be a way to account for this reduction.

## ARE THE DENTAL JOURNALS PUBLISHED IN THE INTEREST OF THE PROFESSION?

In the reply of Dr. Kirk, editor of the *Cosmos*, and Mr. Lewis, president of the S. S. White Dental Manufacturing Company, to our editorial in the DIGEST for March, our first proposition is entirely ignored.

This proposition was, in substance, that the work of organizing the Dental Protective Association did not receive the aid and encouragement from the dental journals published in this country that the merits of the movement deserved; and that, if these journals were, as they claimed, "conducted to meet the needs of the dental profession," the Protective Association certainly came under this head.

We have shown at various times both in print and by word of mouth what the Association was doing, and how it had already relieved the profession of great hardships and abuse; and we challenge anyone to show a movement which has done so much good in the same length of time with so little expense and trouble to its members and none to the body of dentists at large as has been accomplished by this organization; or, we will go further, and ask what other organization has even afforded or resulted in any protection to the profession?

If our claims heretofore and now made are correct, and we wish to have our statements refuted if they are not correct, we again say can any one show why the journals which claim to represent the dental profession and to have its best interests at heart, should not help band the profession together, by urging all dentists to join the Dental Protective Association of the United States,

It is true that since Dr. Kirk has been allied with S. S. White Dental Manufacturing Company to the extent of being employed as editor of their journal, he has not been approached or solicited to aid the work of the Dental Protective Supply Company. We need not explain that we knew full well it was beyond Dr. Kirk's power to use the pages of the *Cosmos* to aid us in this corporation; but he must know that the Dental Protective Supply Company is entirely distinct from the Dental Protective Association and that the funds of the latter can be used only to remedy patent abuses, the greatest evils that have ever afflicted us as a pro-

fession. This being the case can he give us any reason why the *Cosmos* should not further in every possible way the interests of such an Association, if that journal is published as claimed, in the interest of the profession?

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## DOES THE DENTAL PROFESSION NEED CO-OPERATION?

It is needless for us to answer this question in words. The work of the Dental Protective Association is a good illustration of what can be done in the way of co-operation, and we feel quite sure that in the Supply Company a much more extensive success can be accomplished. What is now retarding this movement is mostly indifference and dependence on the part of individual members of our profession. As to whether this plan of doing business is a success or not, we quote in this connection from an article on "Co-operation," by N. O. Nelson, in the *Outlook* of April 27th, 1895:

"Business co-operation is a rising industrial factor that deserves to be better understood in this country. It is sometimes confused with profit-sharing, from which it differs in essential principle. The latter is a division of profits between an employer and his hired men. The system is an excellent intermediate step between the regular wages system and co-operative self-employment. It brings employer and employed closer together. It gives some additional incentive to work, and it yields some addition to workingmen's income. * * * Co-operation stands on very different ground. Here men must depend on themselves; they must sink self; they must work out their own salvation. The difficulties in the way of co-operation are indifference and lazy dependence. Any body of men who are willing to lay up a few dollars, pay cash, and stand together, can start a co-operative store. Any set can start a factory if they will lay by a dollar or two a week for one or two years. In either case they need some good sense, some determination, and a desire to help others while helping themselves. Co-operation at its best embraces religion as well as business. Every co-operator should recognize duty fully as much as rights. The social evils of the competitive system should compel him to join in bet-

tering the feeling as well as the condition of his class. He should understand his duty, the religion of brotherhood. But until he can unlearn the lessons of a lifetime he does well if more regular work and larger income persuade him to join with others on equal terms, and adopt democracy in business no less than in politics. Reflection will tell him that common men can better select capable managers for a business which they understand than for public affairs which they do not understand. He can see that, in the aggregate, great profits are made in business, and that moderate expenses and greater pains in working will offset any superiority of managing skill possessed by private proprietors.

"Co-operation has already passed beyond the experimental stage. In Great Britain alone it now handles a business of over two hundred and fifty millions of dollars a year, from which a profit of over twenty-five millions is returned on purchases, besides paying five per cent. interest on capital and accumulating a surplus. There are nearly two thousand retail associations, of which many have several branches. Some of the societies have as high as thirty thousand members. This whole system has grown from a little club of twenty-eight very poor workmen who joined together just fifty years ago to buy their tea and flour at wholesale, for cash, and deal it out to themselves at the ordinary retail prices, for cash. That pioneer society now has twelve thousand members and nearly two millions capital. Two principles were adopted and rigidly adhered to—cash payments and full market prices. These seem small matters, but they are in fact far-reaching. For cash they can buy at the lowest value, and for cash they can sell without loss of the bad debts and with less account-keeping. They cannot become insolvent, and they know all the time just how business is going. By charging the full market price, and incurring only the necessary expenses for distributing the goods, they accumulate a profit-fund. This profit is made up in large part of what in private business goes in advertising, expensive premises, bad debts, and the disproportion between fixed expenses and business done. Those who know something of business will recognize that these items amount to a large percentage on sales and form a constant danger to capital itself. The customer and the proprietor being the same person, the customer reverses the usual order and seeks the store. Dividends

being upon purchases and not upon capital, the member has the strongest possible incentive to do all his trading at the store.

"In the United States co-operation is far behind England and France. Spasmodic movements have been inaugurated, but they have stranded on the rocks of credit or politics or low prices. The discoveries in business principles which the English workingmen co-operators may be credited with making, namely, cash dealings, market prices, dividends on purchases, and an ever-accumulating surplus—have been overlooked or ignored by the American wage earner, who feels no need of small economies when wages are high and work abundant, and who has nothing to spare for a business venture, when bad times leave him stranded. The plan looks puny and prosy to open handed Americans who do not understand its principles and its possibilities. But the start has been made. Genuine co-operative stores are to be found in every part of the union. Most of them are young and small, but there are some with membership numbering from one to two thousand, and sales as high as $250,000 a year.

"A federation for propagandism is greatly needed, and should be formed. A co-operative society does but a small part of its duty if it ignores the educational and the moral opportunities that lie at its door. In England, Germany, France, and Italy co-operation and profit-sharing command the active sympathy and approval of the leaders of thought and reform. The public men, the preachers, and the influential journals of this country will not fail to give their encouragement whenever the American workingman shows the disposition and the ability to organize co-operative stores and factories on the right principles. The difficulties to be encountered are not so much the business itself as the people's indifference. Where as many as fifty can be gotten together and imbued with the proper spirit a safe start can be made. Care should be taken to keep the expenses so proportioned to the business that a fair net profit will be made from the start. Purchases and sales should be rigidly cash, and prices should be the same as at the neighboring stores. Every one of the fifty should be a missionary to explain the plan to his friends and get them to join. Members should loyally do all their trading at the store, even at some inconvenience. Undertaken in this way, a co-operative store can be started anywhere and be assured of success."

In another editorial we discuss the dissatisfaction which is almost universal among those of the dental profession who are alive to the situation, and understand the methods of those who furnish the dental supplies for the profession. We intend discussing this question in its various phases at greater length than time or space will at present permit. In the meantime we solicit investigation of our plans; correspondence on the subject will receive due consideration and an early reply.

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## MEETING OF THE AMERICAN DENTAL ASSOCIATION.

We wish again to call your attention to the meeting of the American Dental Association, at Asbury Park, New Jersey, the second Tuesday in August. Also to urge all societies to send delegates. Each society is entitled to one delegate for every five members. Delegates must have certificates signed by the president and secretary of their respective societies.

It is desirable that local societies forward material or a condensed report of the important literary work done during the year. Such reports should be forwarded to whichever section they belong. Large delegations are always desirable, and the literary work of each society should be well reproduced.

A notice giving full details of the railroad arrangements, etc., will be published in the next issue.

J. N. CROUSE,
Chairman Executive Committee.

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## Notices.

### COLORADO STATE BOARD OF DENTAL EXAMINERS.

The Colorado State Board of Dental Examiners will meet in Denver, June 18-20, 1895, at the I. O. O. F. hall.

D. MURRAY, Sec'y., Greeley, Colo.

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### SOUTH DAKOTA STATE DENTAL SOCIETY.

The meeting of this society has been postponed one year, meeting June 5-6-7, 1896.

DR. R. F. MERRICK, Secretary,
Sioux Falls.

## WISCONSIN STATE DENTAL SOCIETY.

The twenty-fifth annual meeting of the Wisconsin State Dental Society will be held at Madison, July 16-17-18, 1895. Every effort is being made to celebrate the 25th birthday, and the profession are cordially invited to attend.

DR. CLAUDE A. SOUTHWELL, Secretary.
331 Reed St., Milwaukee

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## MISSOURI STATE DENTAL ASSOCIATION.

The thirty-first annual meeting of the Missouri State Dental Association will be held at Pertle Springs, July 9-12, 1895. All dentists in Missouri are especially invited to attend and a cordial invitation is extended to those of other states. It is expected that this will be one of the most interesting meetings in the history of the Association. W. M. CARTER, Cor. Sec'y.
Sedalia, Mo.

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## ODONTOLOGICAL SOCIETY OF PENNSYLVANIA.

The annual meeting was held May 11, 1895. The past year has been the most prosperous in the history of the society. The following officers were elected: James Truman, president; C. R. Jeffries, vice-president; W. A. Deane, recording secretary; I. N. Bromell, corresponding secretary; J. H. Gaskill, treasurer; J. D. Thomas, librarian; Jos. Head, editor; F. L. Bassett, Mary Stillwell, C. N. Peirce, executive committee.

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## THE NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The next meeting will be held in the parlors of the "Hotel Columbia," Asbury Park, N. J., on Monday, August 5th, at 10 A. M., and at other times as becomes necessary between the sessions of the American Dental Association. It is important that every State Board be represented. Applications from Boards not in membership will receive immediate attention.

CHAS. A. MEEKER, D. D. S., Secretary.
29 Fulton St., Newark, N. J.

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## MASSACHUSETTS DENTAL SOCIETY.

The Thirtieth Annual Meeting of the Massachusetts Dental Society will be held in Boston, at the Rooms of the Harvard Dental School, beginning on Wednesday, June 5, at two o'clock P. M., and continuing through Thursday, June

6. *Mark these dates off your appointment book now*, and plan to be with us. The annual dinner will be at Young's Hotel, at six o'clock on Wednesday; tickets $1.50 a plate; ladies invited. There will be a number of interesting clinics and exhibits, which will well repay your attention. The Councillors will meet promptly at the same place at 9.30 Wednesday A. M., to transact the business of the Society, so that the entire time of the Society may be given to papers, discusssions, etc. JOS. KING KNIGHT, President.

EDGAR O. KINSMAN, Secretary.

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## TRI-STATE MEETING.

The Russell House, Detroit, which will be Headquarters for the Tri-State meeting to be held June 18-19-20, has made a rate of $2.50-$3.00 per day, according to location of room. The Hotel Normandie, an excellent house, just one block from the Russell, has made a rate of $2.00-$2.50, according to room. Dr. W. C. Barrett, of Buffalo, will give a lantern lecture one evening during the meeting. Dr. Barrett has all of Prof. Miller's (of Berlin) bacteriological slides and those of Andrews on enamel formation. Dr. Hollingsworth, of Kansas City, will be present to demonstrate his system of crown and bridge-work. Railroad rates will be announced in the June numbers of the dental journals. G. E. HUNT, Secretary.

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## NEW JERSEY STATE DENTAL SOCIETY.

The twenty-fifth annual meeting (The Silver Anniversary), of the New Jersey State Dental Society will be held in the "Auditorium," Asbury Park, commencing Thursday, August 1st, at 10 A. M., and continuing through Friday, Saturday and Monday A. M., closing in time for the meeting of the American Dental Association commencing Tuesday, August 6th at 10 A. M.

The "Auditorium" is an ideal place for holding a summer dental meeting, being situated in the middle of a block fronting the surf, with large windows opening from every side in one continuous row, thirty large windows with north light for clinics and 390 by 25 feet for exhibits.

A branch of the Asbury Park Post-office will be established in the "Auditorium" and a bureau for general information with attendants constantly on hand.

The New Jersey headquarters will be the "Hotel Columbia" with rates from 2.50 to 3.00 per day. Several large hotels have made contracts from 2.50 to 4.00 per day, and smaller hotels from 8.00 to 12.00 per week.

Full particulars and rates, with map of Asbury Park and a plan of the "Auditorium" will appear in program.

CHAS. A. MEEKER, D. D. S., Secretary.
29 Fulton St., Newark, N. J.

# Obituary.

## DR. H. H. FITCH.

Henry Howard Fitch, D. D. S., died at his home at Pekin, Ill., May 2nd, 1895, of rheumatism of the heart. He had an attack some weeks before, from which he recovered and was considered out of danger, but he suffered a relapse and died very suddenly.

Dr. Fitch was born April 10, 1846, at Mooers, New York; when he was two years old his parents moved to Thetford, Vermont, where he began his education; in 1867 he entered Dartmouth College, from which he graduated.

He began the practice of dentistry in Lisbon, N. H., and in 1876 moved to Pekin, where he remained until his death.

In 1871, in Lee, Mass., he married Mrs. Mary L. Beach, who, with two daughters, survives him.

# News Summary.

A Definition of Influenza.—A clergyman defines *la grippe* as "A cold possessed of the devil."

Manifold Pregnancy.—According to G. Veit, there occurs among about 90 births one case of twins, and among 8,000 one case of triplets.—*Med. Review.*

Indigestion.—Doctor Griffith recommends:

R Oil cloves, 2 to 3 minims.
Dilute hydrochloric acid, 15 minims.
Tincture of nux vomica, 20 minims.
Compound tincture cardamoms, 2 drachms.

At one dose, three times daily, before meals.—*Philadelphia Polyclinic.*

Ankylosis of the Jaw.—Mr. E. N. Nason, of Nuneaton, has narrated in *The Lancet* the case of a man who, some ten years before coming under notice, received some ill-defined injury to the right side of the face. Two years and a half later, movement of the jaw became restricted, and two years later the mandible became completely fixed, so that the teeth could not be separated. The man was nearly starved, so the following operation was performed: Half an inch below the zygoma an incision was made down to the bone along the posterior border of the ramus to the angle. Bony and fibrous thickening was found round the condyle. Having cleared the ramus a wedge-shaped piece, with a base posteriorly of half an inch, was removed by means of a key-hole saw and cutting pliers. The inferior dental artery gave no trouble, and the patient made a good recovery. He began to masticate with very little pain on the third day, and a space between the teeth of seven-eighths of an inch had given no sign of lessening a year later.